

RESEARCH ABOUT THE UNDERSTANDING OF THE CONCEPT OF SUSTAINABILITY FROM THE PERSPECTIVE OF FARMERS AND CONSUMERS.

PART 1 - HOW DO FARMERS DEFINE THE CONCEPT OF SUSTAINABILITY IN
AGRICULTURE?

PART 2 - WHAT DO WE WANT TO FIND IN OUR PLATE TOMORROW?

WORKSHOP ABOUT THE QUESTION OF FOOD IN OUR SOCIETY

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Master thesis

Research about the understanding of the concept of sustainability from the perspective of farmers and consumers

Part 1 – How do farmers define the concept of sustainability in agriculture?

Part 2 – What do we want to find in our plate tomorrow? Workshop about the question of food in our society

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General introduction

The concept of sustainability has been increasingly used during the last two decades in response to the realization of the issues the food system is facing. If this concept sounds like a key for solving those issues, there is a wide diversity of interpretations of the idea behind the term. Obviously, no entity within the system would claim to be “*unsustainable*”. As a consequence, there is a confusion regarding what is sustainable, and what is not.

The goal of this research is to understand how the two most important actors of the food system, the farmers and the consumers, perceive the concept of sustainability.

The first part of the research focus on understanding how the farmers define the concept of sustainability and what are to them the essential elements needed in order achieve a sustainable agriculture. The second part seeks at understanding what the consumer expect to have in the food system of tomorrow.

In the first part of the thesis, farmers answered a survey in which they could express their vision of the concept of sustainability. The results showed that farmers consider the same elements specialists describe as essential such as adapted agronomic practices and ecological management of the farm. Nevertheless, farmers consider a whole set of social and human features as fundamental. For example, crop rotation is an essential agronomic practice that maintains the soil and its fertility, but the farmer also needs to have a good family quality of life and respect for the job he is doing. Those non-countable and difficult to evaluate elements are as important as the usual agronomic consideration. The study suggests that those social and human features must be taken into account when evaluating the sustainability of a system.

In the second part, a workshop has been run in Neuchâtel (Switzerland). Participants, usually consumers from a wide diversity of social background had the chance to learn more about the realities of the current food system in our modern society and to express their wish regarding what they want to have in their plate tomorrow. Results suggest that the participants want to have local, seasonal and high quality food. Such as it is the case in the first part, the participants consider social and human elements such as respect for people, especially producers, and communication as fundamental features for the food system of tomorrow.

Those two parts suggest that the definition of the concept of sustainability is complex. It includes quantitative elements that can easily be measured and monitored. Nevertheless, both farmers and consumers consider qualitative elements as cornerstone of the sustainability of the farm, and more generally of the food system. Those elements are much more difficult to evaluate (maybe impossible for some), but they are fundamental. A system that meets all the agronomic criteria for sustainability will not sustained itself if the farmer is an unhappy man overwhelmed by unfair considerations regarding his job.

An ultimate definition of sustainability is the baseline for establishing global movement toward it. It must however consider the perspective of all the entities within the system, and take both quantitative and qualitative elements into account.

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Part one: How do farmer define the concept of sustainability in agriculture?

Comparison study of the understanding of the concept of sustainability between farmers in Nebraska (USA) and Neuchâtel (Switzerland)

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Summary

The concept of sustainability is nowadays used in a wide diversity of situations with a multitude of interpretations. It however remains the right for only a few specialists to define the term sustainability.

Defining a universal concept of sustainability is fundamental for allowing a global movement toward it. It can of course have local differences, but common essential features should be fulfilled in any system so that one can guarantee a fair and bright future for the generations to come.

During the recent years, some studies started to involve different opinions and perspectives for defining this concept. The cornerstone of this study is that, in order to establish the most accurate definition of the concept of sustainability, point of view from all the involved entities within the system should be considered.

This research focused on asking how farmers in Nebraska (USA) and Neuchâtel (Switzerland) define the concept of sustainability in agriculture. It was not possible to directly compare the perspective of the American and the Swiss farmers due to agricultural policies differences between the two countries and data collection issues. Results showed that in general the vision farmers regarding the concept of sustainability in agriculture is similar to what specialists propose. However, only the easily countable elements of sustainability are considered by specialists. The study showed that farmers also suggest qualitative features such as *“the respect for people”*, *“the quality of life”* and the *“role of the family”* as fundamental elements for the sustainability of their farm. Those are of course difficult to measure and evaluate, but they must be met in order to guarantee a system that will sustain itself.

A better evaluation of sustainability must then take those non-countable elements into account. The difficulty is now to measure those elements that are most likely to be very different from a country to another depending on the socio-cultural history of the place.

Introduction

The idea of sustainability has become, during the last two decades, a concept broadly used and understood. It is applied under a very wide range of different perspectives. This first part of the thesis focuses on understanding how farmers understand the idea of sustainability in agriculture. I will introduce in this first chapter the reasons for researching about the concept of sustainability. A second chapter is dedicated to the methodology used during the research project. The third and fourth chapters present the results and analyses. In the fifth chapter, I will answer and discuss the research questions. Finally in the sixth chapter, I will conclude this first part of the Master thesis.

Why should we look at the meaning of the concept of sustainability?

This first chapter will introduce a brief history of the concept of sustainability and a short review of specialists' definitions. Then, I will present the hypothesis and research questions. In the last part of this chapter, a brief outlook of the countries where the research project took place will be given.

The first use of the term sustainability

The concept of sustainability has become popular in the late eighties, after the World Commission on Environment and Development (WCED) release the Brundtland Report in 1987. The report mentions that a “*sustainable development*” needs seven criteria to be fulfilled and applied in harmony (WCED 1987). Those are summarized in the *Figure 1*.

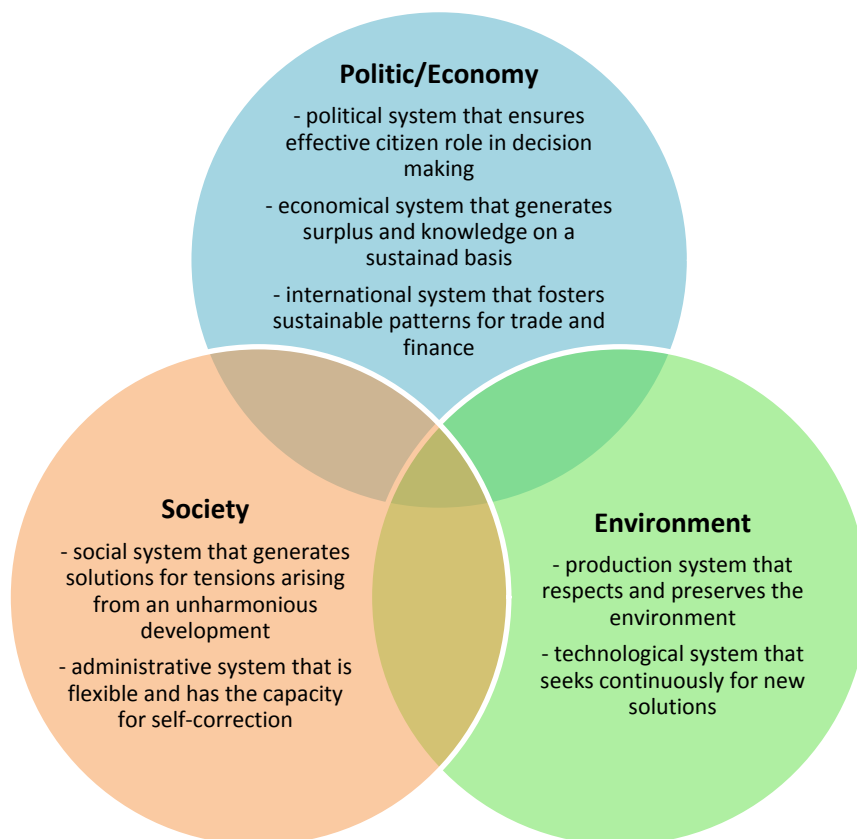


Figure 1: Adapted representation of the requirements for a sustainable development according to WCED (WCED 1987), based on the “*classical sustainability tripod*” (VanLoon, Patil and Hugar 2007). All those elements are needed in order to achieve a complete sustainable development.

Nevertheless, there are evidences that the first uses of the concept of sustainability are much older. Origins can be found in the eighteenth and nineteenth centuries (Lumley and Armstrong 2003). In the early nineties, the term started to be used in a multitude of different meanings by different entities in the political, economical or educational spheres (Weil 1990) and thus became (and is still nowadays) a very attractive word for advertising companies, institutions and political parties (Gale and Cordray 1994). Many researchers sensed a need for clarifying the concept and thus proposed definitions for it. Some terms, such as “*organic*”, “*ecological*”, “*low input*” or “*alternative*” are commonly used in association with the concept of sustainability. However, authors have different opinions regarding an accurate definition of the term sustainable.

A brief review of some authors’ definition of the concept of sustainability

Altieri defines the sustainability of an agroecosystem as a set of agronomic principles that are “*the conservation of renewable resources, adaptation of the crop to the environment, and maintenance to a high but sustainable level of productivity*” (Altieri 1995).

Francis recently presents a broader perspective that includes “*a philosophy, a direction, or a set of goals that will achieve adequate production and economic return, while at the same time including attention to the environmental and social impacts of agriculture*” (Francis 2009).

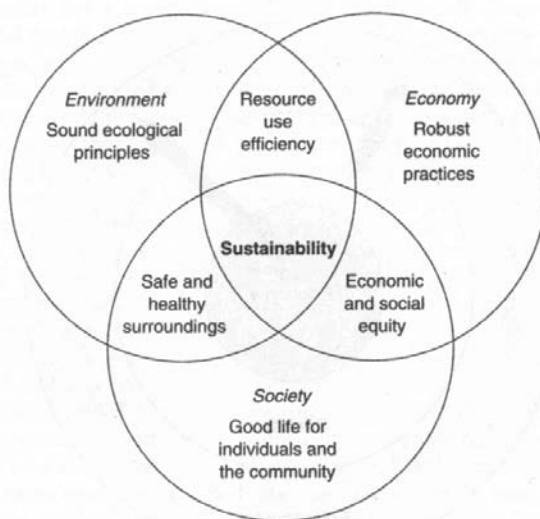


Figure 2: The sustainability tripod suggested by Van Loon.
Sustainability is found at the intersection between environmental, economic and social spheres (from VanLoon, Patil and Hugar 2007)

Van Loon refers to the “*sustainability tripod*” and suggests that the sustainability of an agroecosystem is somewhere in the middle of a set of “*environmental, economic and social*” factors (VanLoon, Patil and Hugar 2007).

Allen already agreed with the tripod definition, and proposed that this must be approached “*through an interdisciplinary focus which addresses the many interrelated part...*” (Allen et al. 1991).

Weil emphasizes on the fact that the definition should focus more on the ultimate goal behind the concept than on the means for reaching the goals and proposed a broad, non specific view. His

definition suggests that agricultural sustainability is met when a program or practice “*enhances, or maintains the number, quality and long-term economic viability of farming...; enhances the integrity, diversity and long-term productivity of both the farm and the environment; enhances the health, safety and aesthetic satisfaction of agricultural producers and consumers*” (Weil 1990).

The definitions are similar, but many authors tend to interpret statements in different ways than others. Companies also interpret and propose their own definition of the idea of sustainability. As a matter of fact, I suggest you to take a look at 5 companies’ webpage and to look for a “*sustainability*” tab. I can guarantee that you will find it in the 5 webpage’s companies. Indeed, who would states that he or the company is not sustainable and thus literally speaking would not last in the future. As a result, for example both Monsanto (the prominent seeds and chemicals agriculture company that have highly controversial stories) and the Sustainable Agriculture Research and Education (SARE) (a

foundation that research and teach about sustainable agricultural practices) present their definitions of a sustainable agriculture that are obviously not the same¹.

A general agreement based on a missing piece of the puzzle

The debate around the meaning of sustainability is not about to be over and unfortunately the concept will be used and misused for many years to come. The worst effect of this never-ending debate is that the most important entities (i.e. farmers that “*farm*” sustainably and consumers that “*eat*” sustainably) face this concept in their everyday life actions and are confused about the boundaries between what is sustainable and what is not.

For years, and it is largely still the case nowadays, a few specialists of academic fields and policy makers have debated around the question of the meaning of sustainability (Kloppenburger et al. 2000) and set principles and tenets of sustainability based mostly on their own views and experiences. However, is the question “*for how long will our current global or local food system last?*” not something that everyone on earth is directly concerned about? A narrow set of specialists have been indeed working hard to bring light on the definition of the idea and always improve it. However, in this process of searching for the ultimate definition, they forget to imply the first concerned and most important entities that are the “*ordinary people*” as Kloppenburger puts it (Kloppenburger et al. 2000).

Why would it be interesting to enquire about the farmer’s perspective?

If the concept of sustainability is nowadays omnipresent in our everyday life, it remains a privilege for some to define it and thus to decide what is sustainable and what is not (Kloppenburger et al. 2000). Some researchers started to feel that there is a need to involve the ones who are the most concerned with this concept in agriculture: farmers (Beus and Dunlap 1991; Biggelaar den and Suvedi 2000; Chiappe and Flora 1998; Dunlap et al. 1992). These literature sources are the baseline for this research project.

Most of the researches that have been done involving the farmer’s opinion regarding the idea of sustainability have first been made in a single country. Recently, some researchers started to seek for cross-country comparisons (Aerni 2009).

My interest in this first part of the master is to look for a possible comparison of the concept of sustainability between my place of origin in Switzerland and one of the most productive country (in term of agricultural production) in the world the United States of America (USA).

I choose to start the research project in Nebraska, a central state in the USA. The decision to enquire in Nebraska was based on the fact that the Professor Francis, my co-supervisor for the thesis, is the Sustainable Agriculture coordinator at the University of Nebraska-Lincoln (UNL) and Professor at the Department of Agronomy and Horticulture at the University of Lincoln-Nebraska (USA). I could thus benefit of an important helpful support for contacts with farmers and other logistical needs during the time spent in Nebraska.

Concerning the second country, I decided to come back to my place of origin in the area of Neuchâtel in Switzerland. I could benefit there facilities, contacts and other logistical resources from my previous experience and habit of the area.

¹ see Monsanto’s vision at: <http://www.monsanto.com/ourcommitments/Pages/sustainable-agriculture.aspx> and SARE’s vision at: <http://www.sare.org/Learning-Center/SARE-Program-Materials/National-Program-Materials/What-is-Sustainable-Agriculture>

Hypothesis

The first hypothesis is that, due to the different economical, political and geographical backgrounds of both countries (see part *Agricultural facts about Nebraska, Agricultural facts about Neuchâtel, Comparison board between Nebraska and Neuchâtel*), it is most likely that the Swiss and American farmers will have different visions of the concept of sustainability. Perspectives will differ as well depending on the type of agricultural practices farmers adopt (i.e. certified organic practices or conventional practices).

Sustainability in agriculture is usually defined by a large set of features (see *Presentation and explanation of the interview guide*). However, by allowing farmers to express their vision of sustainability, I formulate the second hypothesis that new elements of sustainability may appear and complete the current set of elements suggested by specialists, thus widening the definition.

Research questions

Based on the hypothesis, I formulate a set of three research questions I will try to answer during the research project.

The first research question is **how do farmers define the concept of sustainability in agriculture?** This research question stands for both countries where the research project has been designed.

The second question deals with the adherence of the farmers' perspective regarding the definition of sustainability and the perspective of specialists. The question is then **if the farmer's perspective of sustainability adheres with the specialist's perspective?** As it is the case in the previous question, this stands for both countries studied.

Finally, I wonder if **there are divergences and similarities between both countries observed**. If they are dissimilarities, the analyses will try to bring answers about the reasons for those.

Agricultural facts about Nebraska

A brief outlook about different agriculture facts, the geography and agricultural policies in Nebraska will be presented in the following parts.

General facts

Nebraska is among the largest productive states in the United States (U.S.) of cash crops, especially corn and soybean. The size equals 199'097 km² (76'872 mi²). On the 49.2 million acres of lands available, 45.6 million acres are used for farming, which represents 92.7% of the available territories (USDA, 2012). Nebraska is also a top productive state in terms of meat production (cattle and hog).

Landscape and climate

Nebraska is a mostly flat land state. In terms of crop production, Nebraska is roughly divided in the Eastern part where is produced most of the corn and soybean, and the western part of the state that produce hay for livestock. Even though Nebraska is not among the wettest states of the U.S., the precipitation dictates this separation. Northwestern part of Nebraska gets an average of 406mm of rain, and thus suits better for hay production, while Southeast gets 762mm of rain per year, allowing the production of more water demanding crops. Precipitations are variable and occur in general from April to September (USDA, 2012).

Agricultural policies in the USA

The United States of America is among the most productive country in terms of agricultural production in the world. Local consumption in the U.S. did not grow as quickly as the productivity. A need for finding new markets overseas was then necessary. Thus agricultural policies are oriented toward export production of goods. In order to help farmers, government built a support program that subsidizes farmers. This program gives subventions to farmers, but due to difficulty to efficiently support the wide diversity of needs and expectations of farmers in the U.S., the government stated that it is easier to subvention specific good. The beneficiaries of this program are the large scale-specialized commercial farms (USDA 2001). In order to reduce this inequality in the subventions program, the United States Department of Agriculture (USDA) set new policies that consider better the different scales and diversity of farms in the U.S. (see the *"Food and agricultural policies"* available at <http://www.usda.gov/news/pubs/farmpolicy01/fpindex.htm> for detailed policies information).

One can says that agricultural policies are oriented toward support to local supply, but largely to export production. It seems that agriculture in the U.S. has the only function to produce commodity goods, in contrast with the Swiss agricultural policies as we will see it in the following part.

Agricultural facts about Neuchâtel

As in the previous part above, I will introduce here the general facts of agriculture in the area of Neuchâtel in Switzerland. I will present as well agricultural policies in Switzerland.

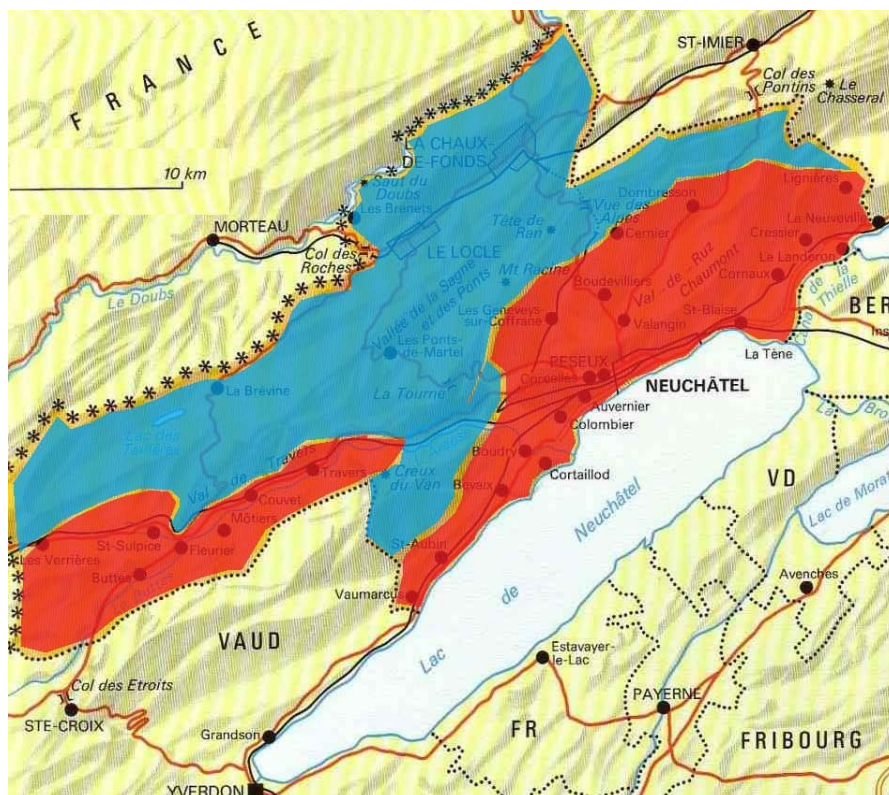


Figure 3: Map of the canton of Neuchâtel. The upper part is painted in blue. The lower part of the canton is painted in red. The altitude in the lower part varies from 450m (1475 feet) up to 800m (2625 feet). In the upper part, altitude varies from 800m (2625 feet) up to 1600m (5250 feet) at the top of Chasseral.

General facts

The size of the canton of Neuchâtel is 803 km² (310 mi²) (Wikipedia, 2012). Agricultural lands represent 320 km² of the available lands or about 40% of the available lands. The production is oriented mainly toward livestock production in the highest part of the canton (cow milk, meat and hay production), and different types of production in the lower parts of the canton (livestock, grains, wine production).

Landscape and climate

The canton of Neuchâtel is divided into two parts. The lower parts are located all along the northern shore of the Lake of Neuchâtel and the middle altitude valleys of Val-de-Ruz and Val-de-Travers (see *Figure 3*). Conditions allow the culture of grains, fodder, livestock and wine along the shore of the Lac de Neuchâtel. Annual precipitations in the city of Neuchâtel are 933 mm per year and average temperature is 9.7°C (Climatedata, 2012).

The highest parts are located in the North of the canton (see *Figure 3*). The high altitude and difficult weather conditions make crop culture difficult. Last frost still happens until mid-May while in the city of Neuchâtel all vegetation has already bloomed. Livestock is the most appropriate farming opportunity there. The annual precipitation in La Chaux-de-Fonds (located at 1039 meters above the sea level) is 1406 mm of rain and the average annual temperature is 5.8°C (Wikipedia, 2012)

Agriculture policies in CH

In Switzerland in 1996, the population voted a crucial new regulation regarding the agriculture in Switzerland. The government decided to write down in the Swiss federal constitution the role Swiss agriculture should have. The regulation states that agriculture should by **sustainable means** (1) supply the national need for food, (2) maintain natural resource and upkeep the landscape and (3) occupy the non-urban area of the country (Swiss constitution, article 104). As a consequence, the government started to offer subventions for farmers in order to follow the federal legislation. This is also known as the introduction of the “PER”, that stands for “*Prestations écologiques requises*” (meaning “*required ecological allowance*”). As a result, the standard agriculture in Switzerland must follow much higher regulations than other neighboring European countries (Barjerolle, Chappuis and Eggenschwiler 2008). This situation put the Swiss consumers in front of challenges where privileging Swiss products means paying higher prices compared to more competitive but less environmental friendly products of European countries and others. As another consequence, the government has also taken an increasing important role in the survival of small-surfaces, high quality farms in Switzerland. The case of subsidized agriculture is still debatable nowadays, but more importantly consumers have to be aware of what does the Swiss standards in agriculture mean compared to other neighboring countries.

Comparison board between Nebraska and Neuchâtel

The following table summarizes the main facts regarding agriculture in Nebraska and Neuchâtel.

Table 1: Comparison board between Nebraska and Neuchâtel

	Nebraska	Neuchâtel
Surface total	19.9 mio (ha) ² 49.2 mio (acres) ²	80'300 (ha) ³ 198'425 (acres) ³
Agricultural surface	18.4 mio (ha) ² 45.6 mio (acres) ²	30'376 (ha) ⁴ 75'060 (acres) ⁴
% of agricultural land use	92.6 %	37.8%
Average farm size	390 (ha) ² 966 (acres) ²	38 (ha) ⁴ 94 (acres) ⁴
Number of farms	47'000 ²	835 ⁴

Methodology

The main tool of research about the perception of farmers of the concept of sustainability in agriculture was a survey. The structure of it will be discussed in details in the following parts.

General structure

The first goal was to build up an open-ended survey that would allow wider variety of answering possibilities. However, as cons, an open-ended survey may not fit in the main research question and there is a high risk of drifting to other less relevant topics for the research. Moreover, data analyzing process is long and tedious due to the coding issues with this kind of data. A semi open structure is then a better option and good compromise. It allows the recipient to express his opinion with some degree of freedom in the topic while making the analyses easier and faster for the researcher.

The first question is an open-ended question. The farmer has to answer about how he defines the concept of sustainability in agriculture. Then 22 statements that encompass a wide range of fields dealing with sustainability are suggested to the farmers. He then has to say whether he strongly disagrees, mildly disagrees, is undecided, mildly agrees or strongly agrees with the statement.

I thus opted for a semi open interview. The first question is the main research question for the thesis: **how, as a farmer, do you define a sustainable agriculture?** This question is a free answer question type. I then build 22 statements where farmers had to propose their opinion. Below each statement there is space left for comments regarding the question (see *Appendix 1*).

The questions are based on different sources in literature. I choose a set of question in regards to the different spheres a sustainable agriculture is supposed to encompass (see *Figure 1* and *Figure 2*). Theoretical sources suggest that a sustainable agriculture is found at the interference of the political, economical, environmental and social spheres (*VanLoon, Patil and Hugar 2007*). I decided to add a fourth and fifth category that are named the production and ethical spheres. The following figure sums up all the statements I asked the farmers to answer.

² Source USDA, 2012

³ Source Wikipedia, 2012

⁴ Source CNAV. 2011. "Rapport d'activités." edited by Chambre neuchâteloise d'agricutlure et de viticulture (CNAV). Cernier 2053, Neuchâtel, Switzerland: Chambre neuchâteloise d'agricutlure et de viticulture (CNAV).

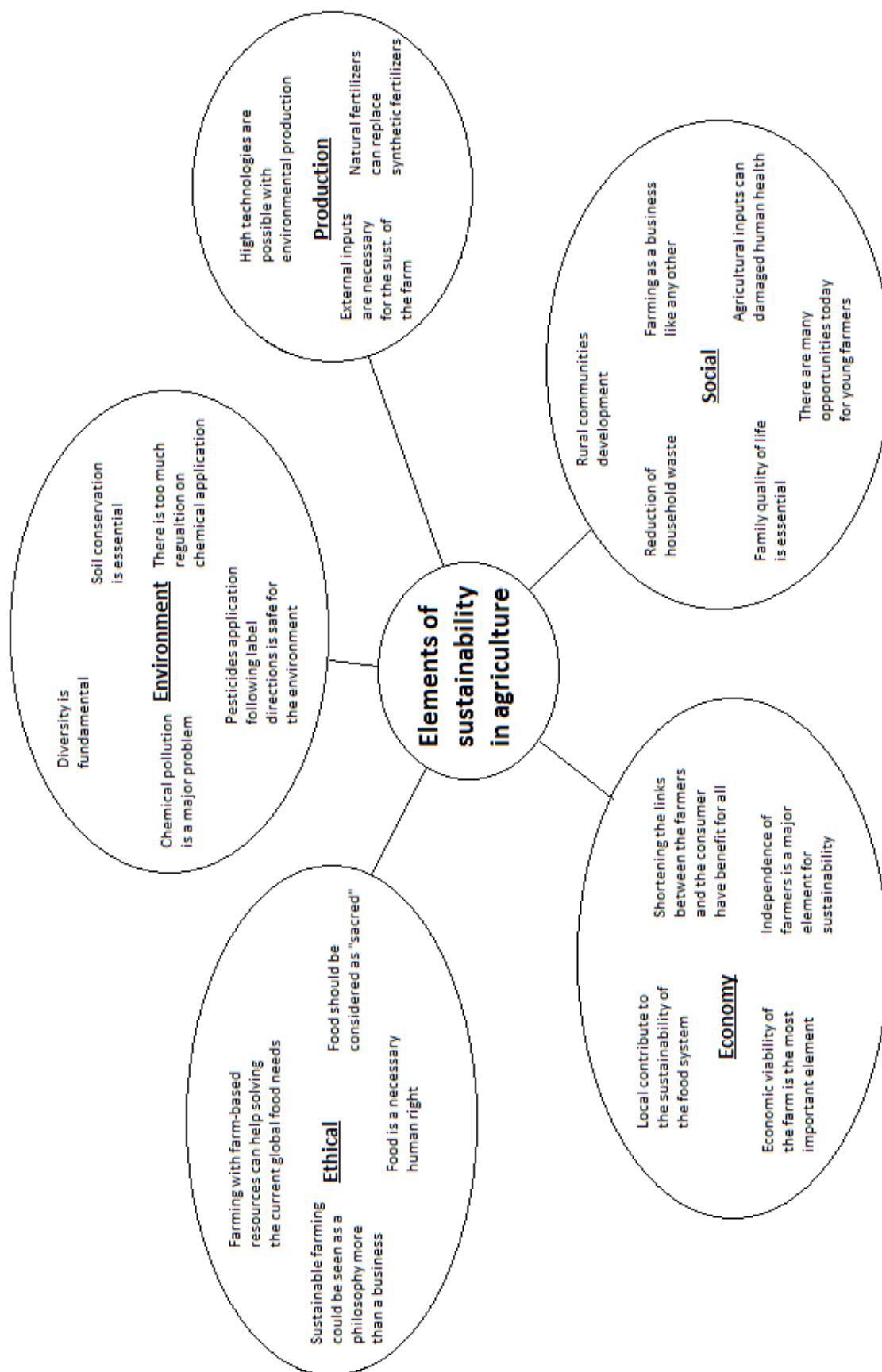


Figure 4: Summary of all the statements proposed for a sustainable agriculture that have been suggested to farmers.

Those five categories encompass a large panel of features for each. In order to make the survey short but still complete enough, a small set of statements has been chosen based on its importance in the literature. A longer survey could have been done, but as it is the case for anyone in the everyday life, the shorter the survey the more willing is someone to answer it.

Presentation and explanation of the interview guide

Open-ended question

In the 1st question, farmers have to explain their vision of the meaning of a sustainable agriculture. They have to define the concept and to suggest what the essential elements of the sustainability of agriculture are.

Results for this question have then been collected and coded. The coded data have been placed in the most appropriate categories (i.e. environment, production, social, economic and ethical) and weighted in term of how many times suggestions were presented by farmers.

22 Statements for a sustainable agriculture

As explain above, I set in this quantitative part of the survey, 22 statements that I found in literature. Those features are generally considered to be important part of the design of a sustainable farming or food system. The following part presents the statements of the survey.

Environmental statements

I decided to choose three statements that deal with the environment category: diversity in agriculture, the perception of the soil and the opinion about the chemicals and their impacts on natural environments.

Diversity is a very often used term when dealing with environment. It is a commonly accepted key element for sustainability when designing a farming system. They are different type of diversity such as diversity of species and interactions (Altieri 1995; Francis 2009; Mohler and Johnson 2009; VanLoon, Patil and Hugar 2007) but also genetic diversity (Bourguignon and Bourguignon 1992). All these types are included under the same term and comments are possible for farmers in case they have specific precisions to suggest.

If the need for diversity is always easy to teach and suggest, farmers may have a different opinion about it when it comes to applying the idea in the farm. I felt thus important to ask how farmers feel about this element. The question farmer have to answer is if they consider **diversity as a fundamental element of a sustainable agriculture**.

Soil conservation is another, commonly accepted, key point for the sustainability of farmlands. Specialists (Bourguignon and Bourguignon 1992; Magdoff and Es 2009) agree that an improved soil management is a necessary step for the preservation of the most important element for agriculture: the soil and its fauna and flora.

When asking farmers to express their opinion regarding this statement, I felt important to sense how the soil is perceived in the agricultural world. The question farmers have to answer is how they consider **soil conservation through management is a key element to sustainable agriculture**.

Farmers have to answer three questions about the use of chemicals in agriculture. I wanted to perceive how farmers see the risks of environmental pollution and how does the regulation act as a protection barrier against such risk. As an example, nitrates pollution is an important factor that causes water deterioration (Crouzet et al. 1999; Nixon et al. 2000). Agriculture is considered as an important source of nitrates, and thus could be responsible for degradation of groundwater sources.

My guess is that they may be interesting differences depending on the type of agriculture. There may be differences regarding countries, most likely due to different agricultural policies as explained above in the *Agricultural facts about Nebraska* and *Agricultural facts about Neuchâtel* parts.

The questions farmers have to answer are (1) **pesticides application following label directions is safe for the environment**; (2) **chemical pollution from pesticides and fertilizers is a major Nebraska/Neuchâtel problem**; (3) **there is too much regulation on chemical application in agriculture**.

Production statements

Three questions encompassing the production category are asked. Those three questions cover the inputs needed for agriculture, how far a farm should follow the principle of self-sufficiency, and how the evolution of techniques and implement in agriculture should interact with the continuous design of a more sustainable farming system.

There is a debate around the question whether natural fertilizers could supply efficiently synthetic fertilizers. Some specialists would argue, that under specific management, it may allow an equivalent yield production when switching from synthetic to organic fertilization practices. This however may take more years to become truly an efficient system. For the specialists that trust more synthetic, well balanced and more quickly available synthetic fertilizers, the current modern varieties that produce more, needs off course more, and chemicals can help facing this need. According to companies that produces synthetic fertilizers, *“without the addition of fertilizers, crop yields would be significantly reduced. That’s why mineral fertilizers are used to supplement the soil’s nutrient stocks with minerals that can be quickly absorbed and used by crops”* (YARA, 2011).

The question farmers have to answer is if **natural fertilizers can replace efficiently synthetic fertilizers**.

During the last decades, agriculture in the developed countries had had tremendous evolutions and progresses (Mazoyer and Roudart 2002), allowing a constant significant increase in yields. Nowadays, technologies such as genetically modified seeds, precision agriculture with help of GPS systems or synthetic fertilizers are used in parallel with more traditional approaches based on natural techniques such as organic or biodynamic farming.

I wanted here to try to understand better how farmers could conceive those two opposite dimensions of the current agricultural reality. The question farmers have to answer is if **high technologies are possible together with environment production**.

Specialists all agreed that a sustainable farm should sustain itself with its own farm-based resources. Some authors even present cases of self-sufficient farming system that rely only on farm-based resources (Altieri 1995; Nelson, Silverstone and Poynter 1993). However, this remains a theoretical statement.

Farmers that face this reality in their everyday life may have a different point of view regarding the self-sufficiency of the farm. The question they have to answer is if **external inputs to the farm are necessary for the sustainability of it.**

Social statements

Six questions that are related with the social sphere of sustainability have been set. It covers a wide range of features, from social health to young farmer working opportunities.

In both visited countries, and globally in all western developed countries, the number of farm has been decreasing during the last decades, while at the same time the size of the farm has been increasing (FAOSTAT 2011a; FAOSTAT 2011b; Mazoyer and Roudart 2002). With less work in the countryside, population started to seek for jobs in urban areas. The phenomenon of rural exodus has increased dramatically during the recent years. The evolution and progresses made in implements and other necessary inputs in farms has driven this exodus and farmers are nowadays able to farm much more land than before, with less human labor need. As a result, the number of farmer in the USA is approximately 5 million people out of 313 million of north Americans, which represents about 1.6% of the US population (FAOSTAT 2011b). In Switzerland the same trend is observed, where the farming population represents 0.38 million people out of an overall population of 7.7 million people. This represents a percentage of 4.9% of the population (FAOSTAT 2011a).

Some specialists suggested that there is a need for reformulating food chains distribution to a more local scale and to (re)build rural communities and social interactions. The question farmers have to answer is if **rural communities should be more important in the future.**

According to specialists, amounts of household food waste (which do not include other kinds of waste that occur at different level of the food chain such as production, processing and post harvest levels) vary depending on the authors and studies conducted. Cautious results suggest that around 14% in the USA, and 25% in UK of consumption goods are wasted in household (Parfitt, Barthel and Macnaughton 2010). Some others authors assume much important levels of food waste by consumers that range from 40% (Gustavsson et al. 2011), up to half of what is bought by consumers (Lundqvist, Fraiture and Molden 2008).

If this behavior might seem not important when dealing with the concept of sustainability, wasting half a piece of meat represents wasting all the needed inputs in the production and processing food chain. In the end, this means an important loss for both the farmers and the environment.

The question farmers have to answer is if **the reduction of household food waste is necessary for the sustainability of the food system.**

I wondered how farmers perceive their job. When looking in literature, I found suggestions that depending if farmers are more into the industrial or agrarian part of the work that are most likely to have different views regarding their job (Beus and Dunlap 1990).

The question farmers have to answer is if **farming is a business like any other.**

Quality of life is a fundamental element of the well being of anybody. It usually enhances someone's joy and motivation in everyday life activity. Knowing the fact that being a farmer is an overwhelming occupation, with heavy workload and never-ending days, I felt important to measure the perception farmers have about this statement.

The question farmers have to answer is if **family quality of life is an important element for the sustainability of the farm.**

As more and more studies suggest evidence of diseases, cancers and malformation due to chemical used in agriculture (Sass and Colangelo 2006), I thought it would be important to measure how organic and conventional farmers feel about this suggestion. One could guess that the ones that are more prone to the use of chemical would feel less danger toward it.

The question farmers have to answer is if **agricultural inputs can damage human health.**

During the last decades there was a trend showing an important decline in the farmers' population. There is less and less farmers for producing the food one needs, and the average age of farmers is dramatically increasing in developed countries (FAOSTAT 2011a; FAOSTAT 2011b; Mazoyer and Roudart 2002). This phenomenon treats the future of agriculture and thus the sustainability of it. The reaction of farmers is then important regarding this statement.

The question farmers have to answer is if **there are many opportunities today for young farmers.**

Economic statements

Four statements related with the economical sphere in sustainable agriculture have been stated.

It is usually more and more common among consumers to talk about local products that you get in the market. There is a general consensus that the food system should offer more local or regional products and ultimately could meet the goal of food sovereignty in the country.

The question farmers have to answer is if the **local production, processing and consumption of food products contribute to the sustainability of the food system.**

This question is similar to the previous one. The difference is that in this statement the focus is specific on the distribution part of the system while in the previous one it encompasses the overall system. Farmers can make the step to become more involved in the distribution of their products.

The question farmers have to answer is if **shortening the links between the farmers and the consumers can have economic benefits for all.**

Economy plays a major role in the development and evolution of a farm (VanLoon, Patil and Hugar 2007). What is important to measure is how farmers balance economy of the farm with other elements.

The question farmers have to answer is if **the economic viability of the farm is the most important element of sustainability.**

As farming as become more and more specialized, a greater need for externalities in the farming system has increased. The ultimate sustainable farm would be a farm that is able to sustain itself with farm-based resources (Altieri 1995).

The question farmers have to answer is if **independence of farmers is a major element for sustainability in agriculture.**

Ethical statements

Finally, four propositions that are related with the ethical sphere have been set.

The first ethical question is similar to the last question regarding the economical sphere of sustainability (i.e. independence of farmers is an important element for the sustainability of agriculture). The difference is that the question refers to the impacts self-sufficiency of the farm could have on the global food system.

The question farmers have to answer is if **farming with farm-based resources can help solve the current global food needs**.

Interesting idea have been found in literature where some authors suggested we should look at food in a different way (Berry 1989). During a conference, some authors received from participants the following suggestion that food should be seen as a “*sacred*” good (Kloppenburger et al. 2000).

The question farmers have to answer is if **the food we eat should be considered as a “*sacred*” good**.

With almost 1 billion of people that are hungry in the world (ETC-Group 2009) one could argue that assessing food as a human right could help this situation to change.

The question farmers have to answer is if **food should be considered as a human right**.

I wanted here to measure how farmer would consider their job in regard with the ethical implications as well as the reflections sustainable agriculture requires.

The question farmers have to answer is if **sustainable agriculture could be seen as a philosophy more than a business**.

Sending the interview to farmers

In Nebraska, I had contacts from my co-supervisor Professor Charles Francis. He introduced me to farmers he personally knows as well as people who could give more contacts. More farmers have been found in the “*Nebraska local food guide 2011*”. This guide is offered by the “*Buy fresh, buy local*” program in Nebraska that promotes the consumers to meet local producers and buy from them local products.

Emails have been sent to farmers, introducing the research project and the reasons why their help is needed. Information has been given in the Email concerning how to access and fill in the online survey.

In Neuchâtel, contacts have been found on the webpage of the organic producers in the canton. Concerning the conventional farmers, I found contacts on the webpage of the farmers’ apprenticeship program.

Due to the very poor rate of answers in Nebraska, I decided to modify the means for collecting surveys. As long as farmers do not have amounts of time, and may not be willing to spend half an hour in front of a computer answering an internet survey, a paper format survey has been sent by “*traditional*” mail. When looking at the rate of answers in the *Table 2*, it seems that this approach was the most appropriate for the research project.

The *Table 2* presents the number of recipients we sent the survey per category (i.e. either organic or conventional farmers) and per area of study.

Table 2: The table summarizes the rate of answers in Nebraska and Neuchâtel

Nebraska	Survey sent	Answers received	Rate of answers (in %)
<i>Organic</i>	34	5	14.7%
<i>Conventional</i>	28	4	14.3%
<i>Total Nebraska</i>	62	9	14.5%

Neuchâtel	Survey sent	Answers received	Rate of answers (in %)
<i>Organic</i>	35	25	71.4%
<i>Conventional</i>	32	18	56.3%
<i>Total Neuchâtel</i>	67	43	64.2%

Results and discussions – open ended question

In this part, the results of the survey are presented. For the first open-ended question, all the suggestions have been collected and analyzed. Similar ideas were grouped together. The importance of each idea has been weighted by measuring how many times it has been raised.

Ideas have been included in five main general categories assessed when designing the interview guide. Those five categories are (1) environmental, (2) production, (3) social, (4) economic and (5) other elements for a sustainable agriculture.

The following charts show the results of the first open-ended question. In each charts, suggestions from organic farmers in Neuchâtel are presented in a light green color bar. Ideas from conventional farmers in Neuchâtel are presented in a light red bar. Propositions from organic farmers in Nebraska are shown in a dark green bar and conventional farmers from Nebraska are presented in a dark red bar. At the end of each bar, a number represents how many times this idea has been suggested by a specific group of farmer.

Results for environmental elements

The *Figure 5* shows all the ideas that were suggested by farmers that deal with the environmental concerns for a sustainable agriculture.

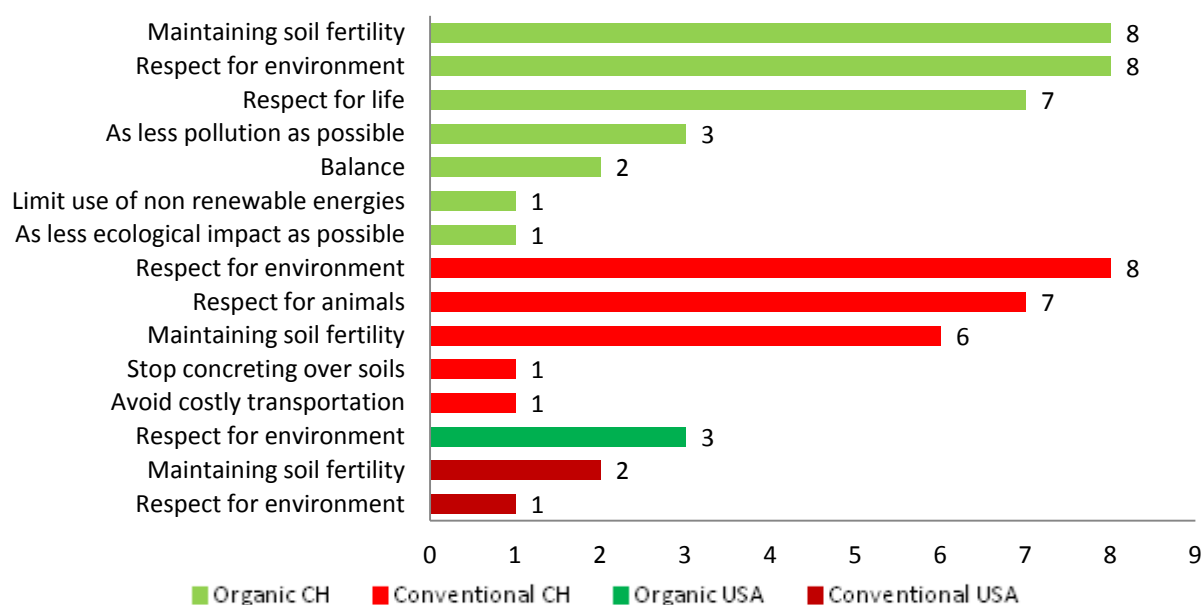


Figure 5: Essential environmental elements suggested by farmers

As we can see in the *Figure 5*, the top ranked suggestions for almost all groups (both organic and conventional farmers in Neuchâtel and conventional farmers in Nebraska) are the maintenance of soil fertility and respect for environment (including also the respect for biodiversity).

There is apparently a solid concern for the respect of life in general for organic farmers in Neuchâtel. Conventional farmers in Neuchâtel show great concerns for the respect of animals.

Organic farmers in Neuchâtel also point out the importance of the pollution from agriculture and wish to reduce it as well as having the lowest ecological impact as possible on the environment. Two

organic farmers also suggest that there is a need to seek for balance in agriculture, especially when it comes to relations between the soil and the development of the plant.

Conventional farmers in Neuchâtel suggest that there should be a reduction of the use of transportation in the food system and there is an urgent need to stop building on good soil in order to save the agricultural lands in Neuchâtel.

Results for production elements

The *Figure 6* shows all the collected ideas in the production category of sustainability in agriculture.

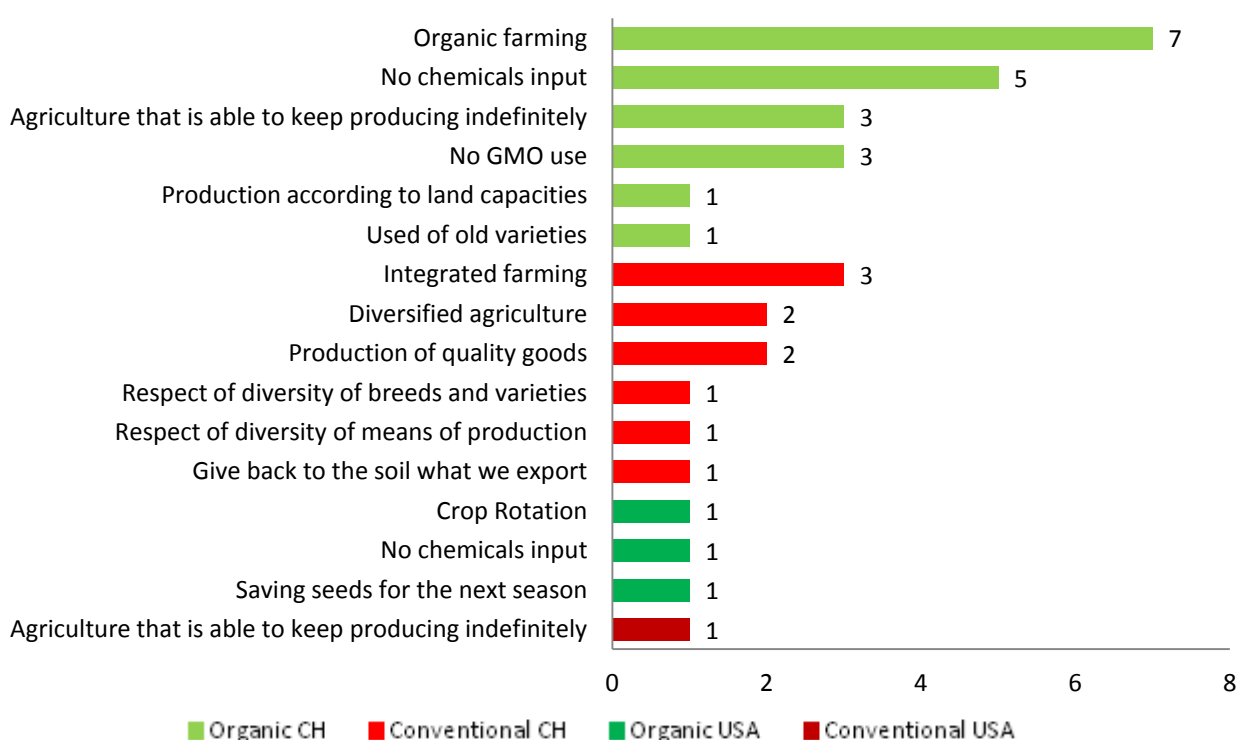


Figure 6: Essential production elements suggested by farmers

As we can see in the *Figure 6*, Organic farmers in Neuchâtel clearly state that agriculture has to be organic to be sustainable. Some even comment that *“this is the only way to save the planet”*. Other elements linked with organic production are also suggested such as non-use of chemical inputs and GMO in agriculture. Few farmers also suggest that a sustainable agriculture has to produce according to the land capacities. There is one proposition that agriculture should use old varieties. Organic farmers in Nebraska have the same ideas here than organic farmers in Neuchâtel. In addition, they put forward the need for rotation practices in agriculture.

Conventional farmers in Neuchâtel propose the practice of integrated and diversified agriculture. These suggestions reflect well the vision of Switzerland about how agriculture should achieve the aims decided in 1996 (see *Agriculture policies in CH*). They also bring up the need for producing quality goods, respect (but not necessarily use) of old breeds and varieties and respect for other practices in agriculture.

Results for social statements

The following *Figure 7* presents the ideas that deal with the social sphere of sustainability in agriculture.

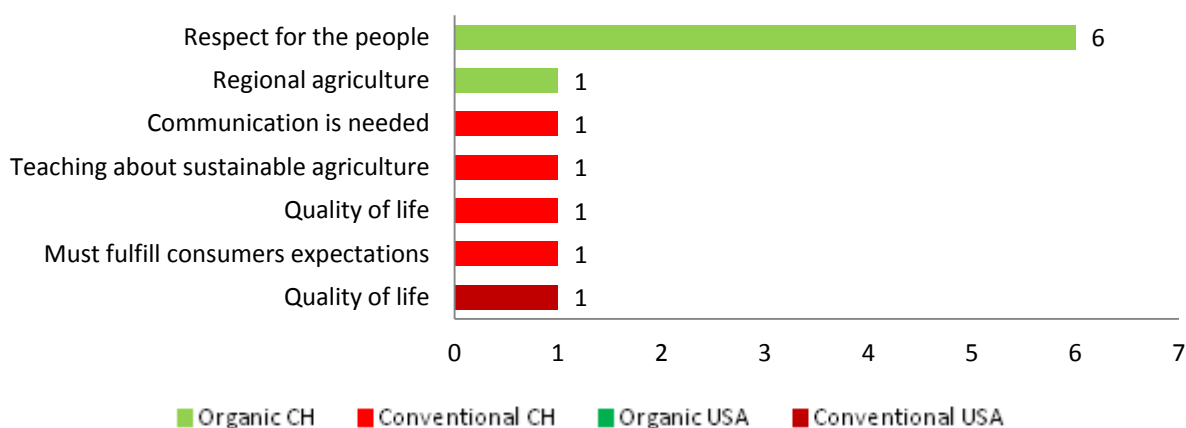


Figure 7: Essential social elements proposed by farmers

As an important concern, the respect for people working in the farm, but also consumer or any other involved person in the food system is suggested by six organic farmers in Neuchâtel. Someone also proposes a need to redesign the relation between the city and the countryside.

Conventional farmers in Neuchâtel consider that communication is a key element for a sustainable agriculture. The person proposing this idea added that communication implies seeking for more information, open-mind setting and being open to reflection. Other suggestions are the importance of teaching young farmers about sustainable agriculture, the quality of life of the farmer must be achieved and ultimately farmers must fulfill consumers' expectations.

One conventional farmer from Nebraska also points out that the quality of life is an important feature for achieving a sustainable agriculture.

Results for economical elements

The following *Figure 8* presents all the ideas that deal with the economical sphere.

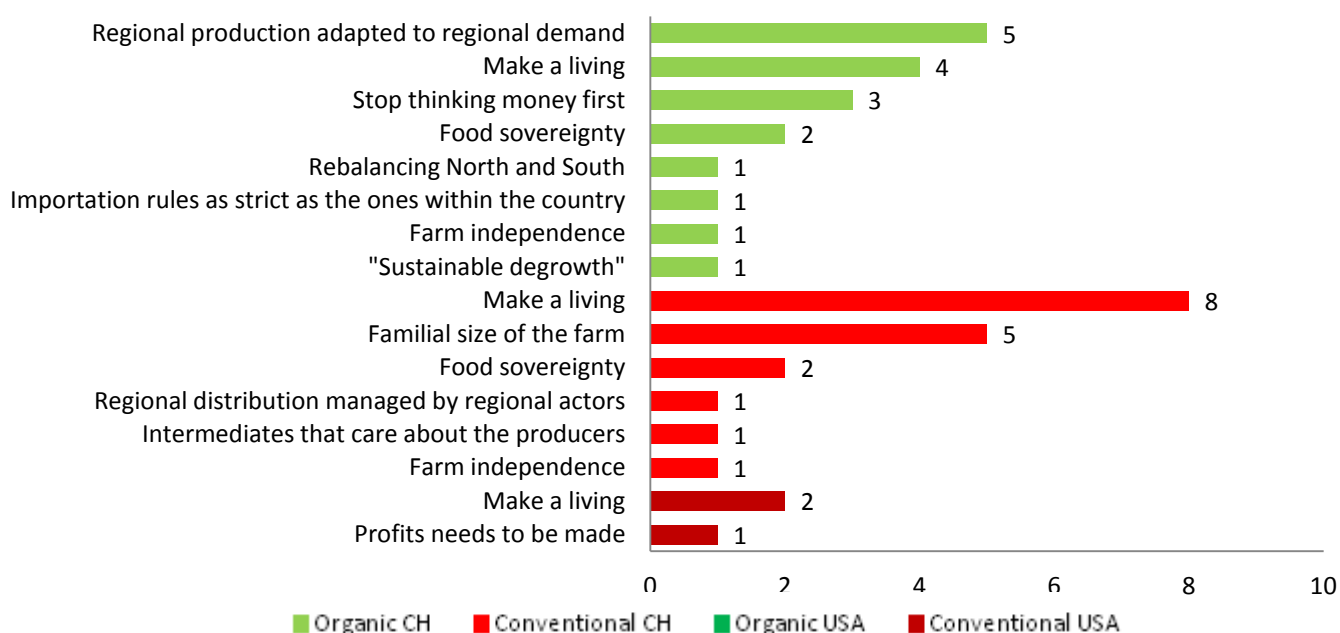


Figure 8: Essential economic elements mentioned by farmers

As a common suggestion across any group, a sustainable agriculture is an agriculture that must able a farmer to make a living with it.

Organic farmers in Neuchâtel seem to agree on the fact that the regional production must meet the regional demand. Some suggest that one should stop thinking about money first, but should show more concerns for all the other (sometimes non-countable) parameters one has to deal with when running a farm. One farmer points out that there is a need for unifying the rules, so that the importation norms are as strict as the production rules in Switzerland. An organic farmer in Neuchâtel suggests that there is a need for rebalancing economical power, production amounts, and other between the northern countries (concerns all "*developed countries*") and the southern countries (usually denominated as the "*in developing*" countries). This could be achieved by another reflection saying that one should aim at a sustainable "*degrowth*" instead of a sustainable development. The independence of the farm has been suggested by one organic as well as one conventional farmer. They suggest here that farmers should reduce their dependence in terms of agricultural inputs (i.e. fertilizers, chemicals and seeds).

Conventional farmers in Neuchâtel strongly suggest that farm size should remains at a familial level. This also includes the fact that the money invested and needed within the farm must remain at a familial level, thus allowing easier repossession of the farm for example. Food sovereignty has been brought up as well. Two suggestions show the need for more respect regarding the work farmers do. They express a need for regional management of the distribution of the products as well as intermediates that do care about the farmers' situation in Neuchâtel, and not about the image of the distribution company they represent.

One conventional farmer in Nebraska suggested that profits needs to be made at the end of the year; otherwise it will be difficult to ensure the financial needs for the next season to come.

Results for other elements

The last category put together different features for a sustainable agriculture that refer to ideological, ethical, religious beliefs and other none previously mentioned categories. The *Figure 9* sums up the ideas we collected from all farmers.

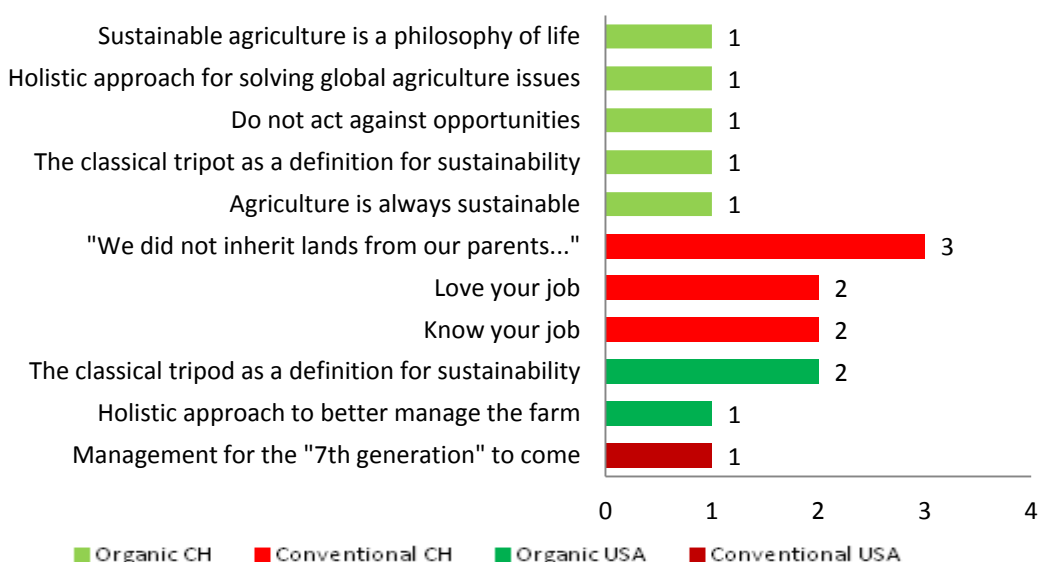


Figure 9: Miscellaneous elements suggested by farmers

As an interesting element, some organic farmers in both Neuchâtel and Nebraska consider the “classical” tripod as an element that defines a sustainable agriculture. As explained in the introduction part, the concept of the sustainability tripod can be summarized by the idea that a sustainable agriculture can be found at the intersection between environment, economic and social spheres (see *Introduction*). This suggestion has usually been developed and is mostly used by specialists from Academia and Institutions. It is thus interesting to see that this concept breaks through the farmer world. They also suggest a holistic approach for solving global agricultural issues. The concept of holism is another methodology developed within Academia.

Organic farmers suggest acting with the opportunities that come in front of you and not against those. A last interesting idea is that agriculture is always sustainable. The farmer comment on the fact that, at least in Switzerland, there never will be any desert and that nature will always find a way to thrive and last. Thus agriculture will always be there, but might evolve through times.

Some conventional farmers in Neuchâtel show great respect for the idea of land possession in regards with generations to come. They actually state that “*we do not inherit the lands of our parents, but borrow the ones of our children*”. Ultimately, a farmer must love and know his job otherwise it is worthless doing it.

One conventional farmer brings up a native principle that says that when you are doing something on your farming lands, you have to think upon the 7th generation behind you and must not compromise any chance to this 7th generation to get the same from the lands as you do.

In general, farmers suggest elements of sustainability that have been selected in the 22 statements of the quantitative part of the survey.

There are no clear distinctions between the suggestions in the environment category. All groups of farmers seem to show good care for the environment and the maintenance of the soil. They consider the respect of life as a fundamental feature of a sustainable system.

Some divergences are a bit more noticeable between groups regarding production elements of sustainability. Organic farmers in general clearly refuse some techniques and practices (e.g. no chemicals use and no GMO seeds, see *Figure 6*) while conventional farmers seem to be more willing to use those. The suggestions from Swiss conventional farmers reflect the political direction taken by the government in 1996 (see *Agriculture policies in CH*), especially when suggesting **integrated farming** as a sustainable practice in agriculture.

Regarding social elements, quality of life is apparently an important element in a sustainable agriculture; however few suggestions have been collected in this category. Organic farmers in Neuchâtel strongly suggest the **respect of people** as a fundamental aspect of the social part of sustainability.

All groups agree that the economical viability of the farm is a necessary element for sustaining a farming business. All groups also show concerns about the need to have a regional distribution strategy as well the overall goal for a country to achieve food sovereignty.

In the last category, miscellaneous elements are grouped together. Some suggestions are very interesting such as the concerns some farmers have about the care of the lands and those will be preserved for the future generations to come. It is also interesting to find some academic concepts (such as the concept of **sustainability tripod** or **holistic approach**) breaking through the farmers' world.

However, further comparisons between the different groups are not possible due to the very poor rate of answers in Nebraska (see *Table 2*). The number of data collected from farmers is too small to be representative.

Results and discussions – quantitative questions

For the quantitative part of the research, the results have been presented based on the following method. Each statement is scored from 1 to 5, where 1 refers to a “*strongly disagree*” opinion, and 5 refers to a “*strongly agree*” opinion. I then collected all scores, and measured the average score and the standard deviation for each of the 22 statements.

Charts are presented by categories of statements. Both countries are shown in each chart. As explained earlier, four colors are used to represent both conventional and organic farmers from both Switzerland and USA. Conventional farmers from Switzerland are represented in a light red and conventional farmers from USA are represented in a darker red. The same code works for organic farmers with a light green for the ones from Switzerland, and a darker green for the ones in the USA. Averages are shown at the top of each bar. Below each charts, a table sums up the mean average (mean) for each scores and the standard deviation (SD). Results are discussed per countries. No specific comparisons are given between countries (see *Are there any similarities or differences between Nebraska and Neuchâtel?*).

Results for the environmental statements

The Figure 10 shows the results for the first category of statements that are environmental statements.

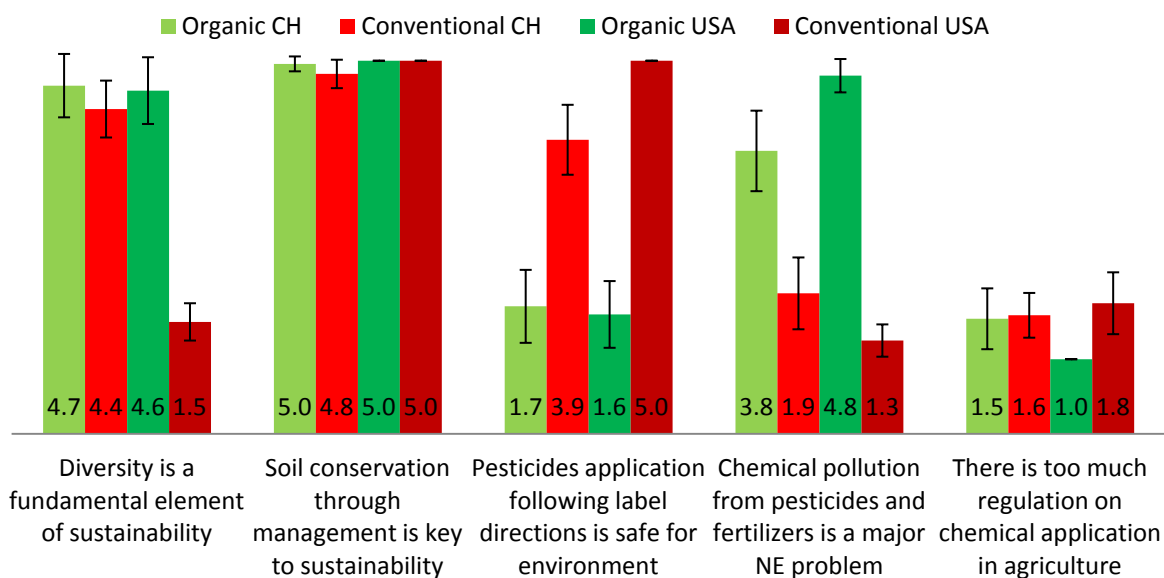


Figure 10: Results for the environmental statements

The following table summarizes the mean averages for each features as well as the standard deviation.

Table 3: Results for the environmental statements

	Org. CH		Conv. CH		Org. USA		Conv. USA	
	mean	SD	mean	SD	mean	SD	mean	SD
Diversity in agriculture	4.7	0.8	4.4	0.8	4.6	0.9	1.5	0.5
Soil conservation	5.0	0.2	4.8	0.4	5.0	0.0	5.0	0.0
Pesticides application	1.7	1.0	3.9	0.9	1.6	0.9	5.0	0.0
Chemical pollution	3.8	1.1	1.9	1.0	4.8	0.4	1.3	0.4
Chemical regulation	1.5	0.8	1.6	0.6	1.0	0.0	1.8	0.8

In Neuchâtel, both organic and conventional farmers strongly agree with the suggestion that diversity is an essential element for the sustainability of agriculture. Some conventional farmers even suggested that *“monoculture is a disaster”* and that this will lead to *“pest resistance issues”*. Some organic producers show some moderation regarding diversity, agreeing that if the principle is essential, *“becoming too much diversified increase the risk of getting lost”*.

In Nebraska organic farmers agree with this statement such as the producers in Neuchâtel, but conventional farmers do not agree with it. They are much more reticent suggesting economical reasons and extra time needed. As a fact, growing different crops means the need for different implements. Some conventional producers in Nebraska also suggested that *“one farms best with few species, and thus can take the best of his own experience and knowledge with those few crops”*.

The management and maintenance of the fertility of the soil is a statement that all groups totally agree on (see *Figure 10*). It seems that farmers are very well aware of their role as land keepers and maintainers.

There are some more disagreements regarding the statements about chemical in agriculture. As it is the case for farmers in Nebraska, organic farmers in Neuchâtel do not think that pesticides application following regulation is safe enough for the environment. Comments show concerns about pesticides association, and the power of some companies for research about possible environmental and health damages. Conventional farmers generally agree with this statement. It is probably important here to remind the agricultural policies in Switzerland (see *Agriculture policies in CH*). Thus it is more understandable why conventional farmers agree with this statement and trust policies regarding chemicals. However, even among conventional producers, some show doubts about the real effect of pesticides, suggesting as well that in some cases *“financial stakes are more important to reveal the truth”*.

In Nebraska, both groups (conventional and organic) do not agree on the proposed statements. Conventional farmers seem to suggest that chemicals application following the norms is not harmful for environment commenting that *“most producers are environmentally friendly because we eat the food and would not hurt our family”*, while some organic farmers put forward that *“Atrazine (has already) contaminated a huge part of the ground water table (...) in Eastern Nebraska”* and that this may have negative impact on human health. As a matter of fact, the European Union has banned the use of Atrazine since 2003, while it is still in use in the USA, despite the fact that some studies suggest potential risk of cancer for humans (Sass and Colangelo 2006).

As the previous statements, both groups disagree whether chemical pollution is a problem or not in Neuchâtel. The conventional producers do not agree and comments on this by saying that since the introduction of PER regulations there has been improvements in Switzerland, especially when comparing our conventional agriculture to other in the world. Moreover, farmers are *“cautious and responsible”* people. Organic farmers do agree with this proposition, however they show good awareness on the fact that the standards Swiss agriculture is much more in advance regarding other agricultural policies, and thus great improvement have indeed been made.

The two groups in Nebraska take the same stand regarding this statement but no comments have been suggested.

Concerning the last statement, both sides do not agree on the fact that there is too much regulation for pesticides. Some wish to have more regulation, and other to have less. However, as an interesting comment coming from both sides, they wish that neighboring agricultures have more regulation so that the local products *“are not discriminated”*. Once again, both organic and conventional farmers agree on the fact the Swiss agricultural policies have high standards for environmental and ecological management compared to other countries. Some suggest that there is not a real need for more regulation as long as *“the Swiss regulations are the most severe in Europe”*.

The same situation can be observed in Nebraska, where both groups do not agree that there is too much regulation in agriculture. Based on the comments collected, organic farmers may wish to have more regulations, as one said that *“there is probably not enough (regulation)”*, while conventional farmers might want to have less regulations, and that farmers know what they are doing as one said *“when you have to spray, you have to”*!

Results for the production statements

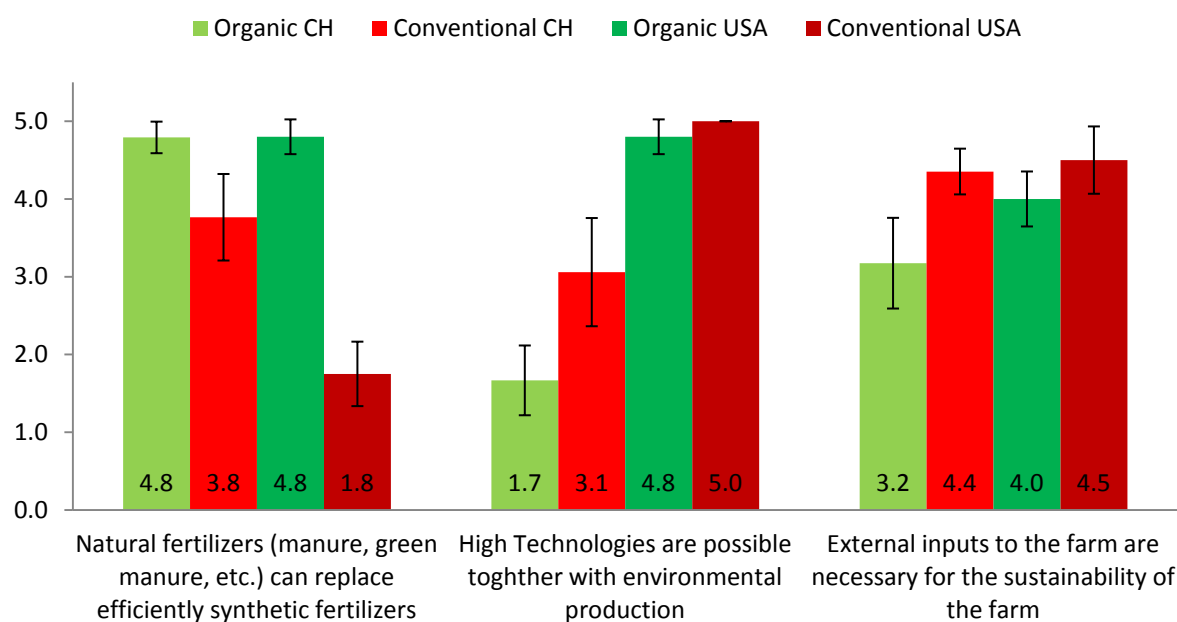


Figure 11: Results for the production statements

The following table summarizes the mean averages for each features as well as the standard deviation.

Table 4: Table of results for the production statements

	Org. CH		Conv. CH		Org. USA		Conv. USA	
	mean	SD	mean	SD	mean	SD	mean	SD
Natural Fertilizers	4.8	0.4	3.8	1.1	4.8	0.4	1.8	0.8
High Technologies	1.7	0.9	3.1	1.4	4.8	0.4	5.0	0.0
External inputs	3.2	1.2	4.4	0.6	4.0	0.7	4.5	0.9

In Neuchâtel, organic farmers strongly agree with the suggestion that natural fertilizers can replace synthetic fertilizers. Conventional farmers agree with some restrictions about this statement. Since the introduction of the PER, natural fertilizers has been broadly used even in conventional farms. In some cases though, additional synthetic components can improve the quality of the fertilizer. Farmers show some concerns about the risk that there is a lack of some nutrients while only applying natural fertilizers, otherwise it is widely accepted and use.

In Nebraska, organic farmers share the same vision as organic farmers in Neuchâtel. Conventional farmers do not agree natural fertilizers can replace efficiently synthetic ones. Comments suggest doubts about the capacity for compost or manure to be able to maintain as high as they have with the synthetic fertilizers. A clever comment made by an organic farmer in Nebraska said that *“replacing all the synthetic fertilizers by natural ones on a huge scale is quite dangerous in terms of yields”*.

In Neuchâtel, organic farmers do not agree that high technologies are possible with environmental production, while conventional ones moderately agree with this. In general, both sides think that precision agriculture is an interesting way to improve production. In most cases though, farmers

(both organic and conventional in Neuchâtel) reject the use of GMO technology in agriculture. Producers seem to be very cautious when dealing with this modern technology.

In Nebraska, both groups agree that high technologies are possible with environmental production. No comments were collected concerning how those technologies are perceived by producers.

In Neuchâtel, organic farmers moderately agree about the statement that external inputs are needed for ensuring the sustainability of the farm. Most comments were mentioning that seeds are definitely a required component that comes from outside of the farm, due to the fact that it is not always an easy process to produce seeds within the farm. Thus, organic farmers seek at gaining more autonomy for their farms. Conventional farmers agree with this statement, commenting on the fact that there are factors that are not available in the farm, sometimes due to specialization of the farming activity, and thus there is a need for having those from outside such as in the situation when *“a cow is sick, you need to take care of her”*.

In Nebraska, the two groups have the same position regarding this last statement, without giving specific comments for it.

Results for the social statements

The following figure summarizes all the results regarding the social statements.

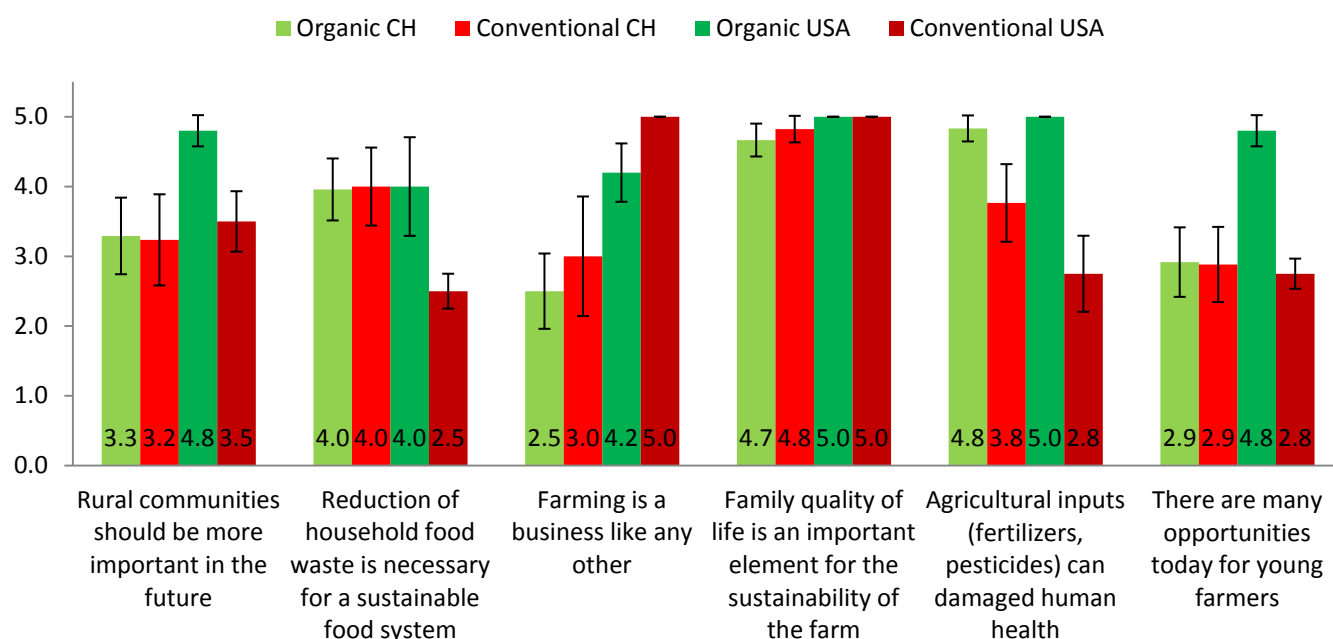


Figure 12: Results for social statements

The following table summarizes the mean averages for each features as well as the standard deviation.

Table 5: Table of results for the social statements

	Org. CH		Conv. CH		Org. USA		Conv. USA	
	mean	SD	mean	SD	mean	SD	mean	SD
Rural communities dev.	3.3	1.1	3.2	1.3	4.8	0.4	3.5	0.9

Reduction of waste	4.0	0.9	4.0	1.1	4.0	1.4	2.5	0.5
Farming as any business	2.5	1.1	3.0	1.7	4.2	0.8	5.0	0.0
Family quality of life	4.7	0.5	4.8	0.4	5.0	0.0	5.0	0.0
Agricultural inputs effects	4.8	0.4	3.8	1.1	5.0	0.0	2.8	1.1
Opportunity for young farmers	2.9	1.0	2.9	1.1	4.8	0.4	2.8	0.4

Regarding rural development, both organic and conventional farmers moderately agree with it in Neuchâtel. As a fact, urban sprawl is a big issue in Switzerland where space for cities and countryside has to be located between lakes and mountainous areas. Both sides show great concern about the fact that they do not want to lost more land for suburban development. As a striking comment, *“building dormitory neighborhoods on the best lands should be banned”*. It is thus understandable why farmers are not so eager to see rural communities develop further in the future.

In Nebraska, both groups moderately agree with the same statement but no relevant comments have been collected.

Both organic and conventional producers in Neuchâtel agree that waste should be reduced. However, some suggested that waste can produce good compost that will be reutilized in agriculture. As a fact, Switzerland has a long tradition for recycling garbage and waste. Some however pointed out the behavior of consumers in developed countries that throw away about 30% of the food produce.

In Nebraska, organic farmers share the same opinion than producers in Neuchâtel, while conventional ones are undecided with this statement.

In Neuchâtel, both organic and conventional farmers are undecided whether farming is a business like any others. Among the comments we collected, both sides clearly mention that this job requires multiple abilities such as *“being a business manager, a biologist, a veterinarian and many other jobs”*. Many also suggest that working with a living element and producing a good that is essential for human life makes this job much different from any other.

In Nebraska, organic farmers seem to moderately agree with this statement, with the exception that it is *“unique because we produce food”*. Conventional producers consider it totally like any other business.

In Neuchâtel, both organic and conventional farmers strongly agree that family quality of life is an essential element for the sustainability of the farm. From both sides, comments suggest that the family is actually what makes the rest possible. *“It is a core value among any farmers. If you start to lose this element, then farming becomes more and more like an enterprise”*. However, some point out that it is hard to deal with family and farming at the same time *“when you work 100 hours a week, without any holidays during the year”*.

In Nebraska, both groups totally agree with this proposition but give no extra comments.

Organic producers in Neuchâtel strongly agree with the fact that agricultural inputs can damage human health, even mentioning that *“it is in agriculture that you can find the most cases of cancers and malformations”*. Conventional farmers agree with this but are a bit more moderate, explaining that *“any product used properly is safe for the environment and the people”* and that farmers are *“responsible people”*.

In Nebraska, organic producers totally agree with this statement while conventional farmers are undecided. Some make the same comments as conventional farmers in Neuchâtel that any “*products properly used is safe*”.

Both organic and conventional farmers in Neuchâtel are quite undecided whether there are many opportunities for young farmers. Some organic farmers suggest that there is a market for organic products, but that young farmers are usually not interested in. Some others suggest that “*you always to go as far as your dreams carry you*” and that there will always be opportunities. More pragmatic is the fact that there will always be a need to “*eat three times a day*” as one farmer mentions it. Some conventional farmers are more down-to-earth and comment on the point that the current agricultural policies are not encouraging young farmers to take over. “*Young farmers that are motivated and willing to work hard for less will find opportunities*”.

In Nebraska, organic farmers strongly agree with this suggestion as long as they “*work hard, and make a place for themselves*” as one farmer commented. Conventional farmers in general are more skeptical, commenting that “*farming is becoming more and more complicated. They are bigger amount of money involved in the business*”. They add that “*they are some opportunities, but one must seek out a niche that you can make a living with it*”.

Results for the economic statements

The following Figure 13 shows the results for the category of the economical statements.

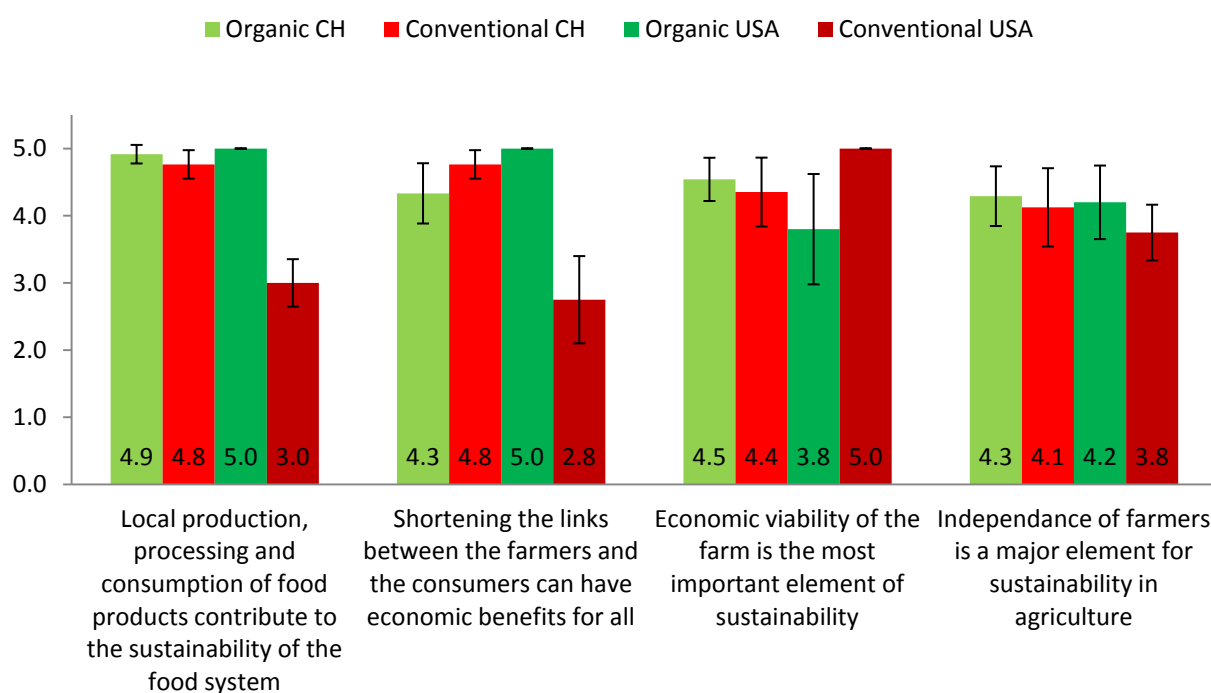


Figure 13: Results for economic statements

The following table summarizes the mean averages for each features as well as the standard deviation.

Table 6: Table of results for the economic statements

	Org. CH		Conv. CH		Org. USA		Conv. USA	
	mean	SD	mean	SD	mean	SD	mean	SD
Local food system	4.9	0.3	4.8	0.4	5.0	0.0	3.0	0.7
Shortenings links between field/fork	4.3	0.9	4.8	0.4	5.0	0.0	2.8	1.3
Economic viability of the farm	4.5	0.6	4.4	1.0	3.8	1.6	5.0	0.0
Independence of farmers	4.3	0.9	4.1	1.2	4.2	1.1	3.8	0.8

Both organic and conventional in Neuchâtel agree on the proposition that a local production, distribution and consumption are important elements for sustainability. Both sides commented on the benefits for such a situation like *“increasing the quality of products”*, *“supplying the country”* in terms of food needs and finally saving money on petrol as well as saving the environment by reducing pollution.

In Nebraska, the two groups strongly agree with the proposition that local production, processing and food consumption can contribute to the sustainability of the food system. Conventional farmers in Nebraska are quite undecided regarding this statement. One adds a thoughtful comment that *“it depends also on what you are producing. Big processing and distribution plants are usually much more efficient than small multiple dispatched transforming factories”*. As a fact, the niches organic farmers in Nebraska, in general CSA⁵, and conventional ones are much different and do not have the same production goals and distribution means. Local distribution is the main path for small organic farmers that usually produce goods that can be eaten locally such as vegetables. Conventional producers usually grow corn and soybean that will be used on a much wider scale and thus are more skeptical when it comes to local distribution scales. In Switzerland the situation is different as long as both organic and conventional farmers produce goods that are can be eaten locally. They thus are more prone to this type of distribution that gives them extra incomes.

Both organic and conventional producers in Neuchâtel agree that shortening the links between producers and consumers can have benefits for all. Both sides commented that farmers can get higher benefits when selling directly, and consumers have the certainty to buy quality products. In most comments, intermediates are not well appreciated. The only negative point is sometimes the difficulty to set direct selling, notably due to the fact that, as one farmer mentioned it, *“we have only two hands”*. This kind of distribution requires more time and management skills to achieve the farmer’s goals.

In Nebraska, organic farmers agree with the suggestion that shorter links between producers and consumers can have positive benefits for all. Conventional producers are undecided regarding this statement. As explained above, conventional farmers in Nebraska do not have the same pattern of products distribution as smaller organic farms.

All groups in Neuchâtel and Nebraska agree that the economic viability of the farm is necessary for the sustainability of it. As a simple but clever comment *“you need to make money if you want to farm next season”*. Some organic farmers are more moderate and suggest that the economy of the farm concern has to be *“balanced with the care of the land”*.

Finally, both organic and conventional producers in Neuchâtel and Nebraska agree that independence of farmers is important for the sustainability of agriculture. However, some mentions

⁵ Community supported agriculture

that the idea of independence is relative, as long as Swiss agriculture is well protected by the government's regulations.

Results for the ethical statements

The following *Figure 14* presents the results we collected regarding the other suggested statements

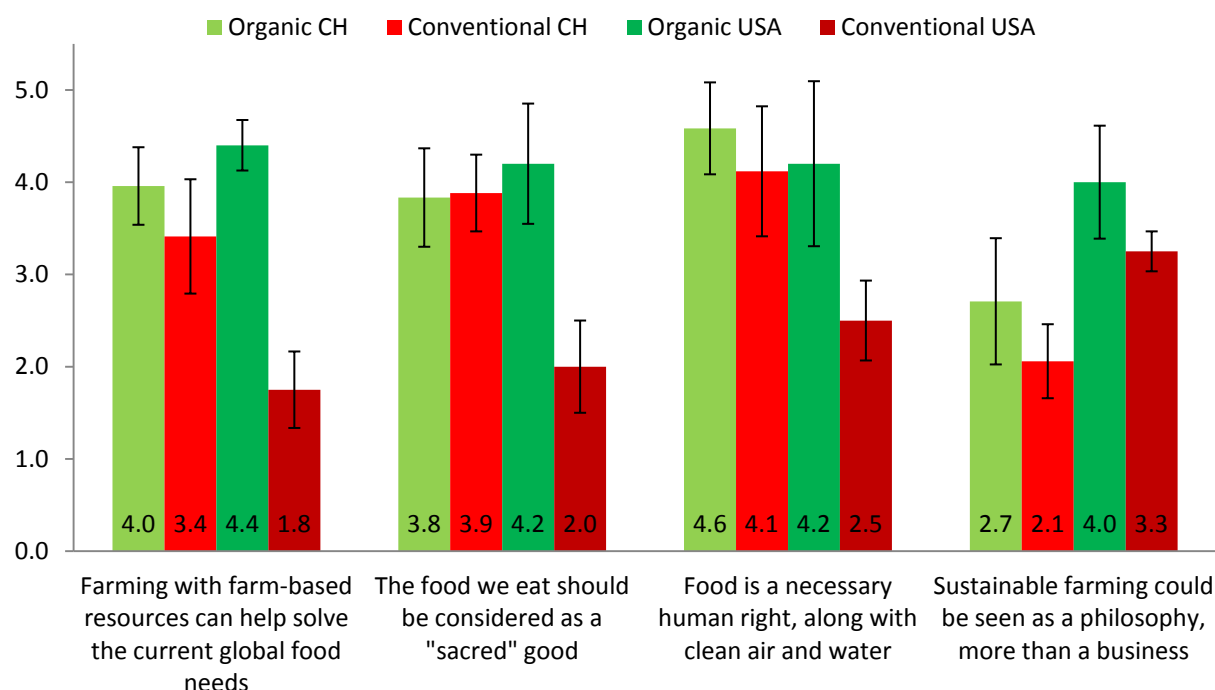


Figure 14: Results for the ethical statements

The following table summarizes the mean averages for each features as well as the standard deviation.

Table 7: Table of results for the ethical statements

	Org. CH		Conv. CH		Org. USA		Conv. USA	
	mean	SD	mean	SD	mean	SD	mean	SD
Autonomy as a solution	4.0	0.8	3.4	1.2	4.4	0.5	1.8	0.8
"Sacred" food	3.8	1.1	3.9	0.8	4.2	1.3	2.0	1.0
Food as a human right	4.6	1.0	4.1	1.4	4.2	1.8	2.5	0.9
Sustainable farming as a philosophy	2.7	1.4	2.1	0.8	4.0	1.2	3.3	0.4

In Neuchâtel, both organic and conventional farmers agree at different degrees that farming with farm-based resources could help solving the current food issues. However some organic farmers mention that, *"due to corruption and economic power of some agro industrial companies, it is very difficult to inverse the current situation"*. Conventional farmers moderately agree with this statement and point out in their comment that there is always a *"necessary need for financial funds"* that, almost in any cases, comes *"from outside the farm"*.

In Nebraska, organic farmers agree with the proposition while conventional farmers do not agree with it and suggest that *“the current issues are much more complex than that”*.

Both organic and conventional farmers agree that food should be considered as sacred. Especially when looking at how we waste food in the developed countries. Some, both organic and conventional, suggest that the term *“sacred”* is a bit too strong, and that instead the term *“important could fit better”*. Some clearly mention the lack of respect regarding food in our society, and how lucky are the consumers in Switzerland with the food quality. Thus they really wish to see consumers who *“show more respect for food than we do now”*.

In Nebraska, one organic farmer commented that *“the term sacred is vague and thus prone to a debatable definition”*. Conventional farmers did not express specific comments, but apparently do not agree with this statement.

In Neuchâtel, both organic and conventional agree with the suggestion that food should be considered as a human right. However some farmers, both organic and conventional, mention that there is a lot of work behind a food product. Farming is a work that should have more respect from other people. *“The access to land and the possibility to farm”* are suggested as a right.

In Nebraska, organic producers agree in general that food should be considered as a human right, while conventional farmers are undecided. One suggested that *“people that are able to work need to be productive and work for their goods”*. Other comments from organic farmers said that *“broadcasting and harvesting is a lot of work”*. A last comment is that *“the access to land should be a human right”*.

Finally all groups are undecided or moderately agree whether sustainable farming is a philosophy more than a business. Many comments from both organic and conventional farmers actually suggest that *“it is equally a business and a philosophy. The philosophy inspires the business”*.

Answering our research questions

I analyzed all data collected and used them to answer the three research questions. The three research questions are

1. How do farmers define the concept of sustainability in agriculture?
2. Does the definition of sustainable agriculture adhere with the one suggested by specialists?
3. Are there any similarities or differences between Nebraska and Neuchâtel?

How do farmers define the concept of sustainability in agriculture

The *Figure 15* gathers all the most suggested elements of sustainability in agriculture. Based on the data collected, results suggest that farmers consider the **conservation of the soil** and its fertility, the **respect for the environment and for life** and its biodiversity and more generally the **respect for life** as fundamental elements of the environmental sphere of sustainability.

Concerning the production category, farmers suggest that **organic farming** or **integrated farming** are practices that can guarantee sustainability in agriculture. **No chemicals** uses have been suggested in

general by farmers whom practices are related to organic farming. Swiss farmers also reject (both organic and conventional) the **use of GMOs** in agriculture. As a conclusion, some suggest that a sustainable agriculture is an agriculture that is **able to keep producing indefinitely**.

As an essential social element, most farmers point out that the **respect for people** is very important.

Regarding the economic side of sustainability, farmers are pragmatic and say that farming should be an activity that allows the producer to **make a living** with. It should be a **regional production** adapted to the local demand. Ultimately the farm should remain a **familial size**.

Ultimately some suggestions are that a farmer should **love and know his job**. Sustainable agriculture is a **philosophy of life**, more than a business. Some producers make the last comment that ***“we did not inherit the lands from our parents but we are borrowing the ones of our children”***.

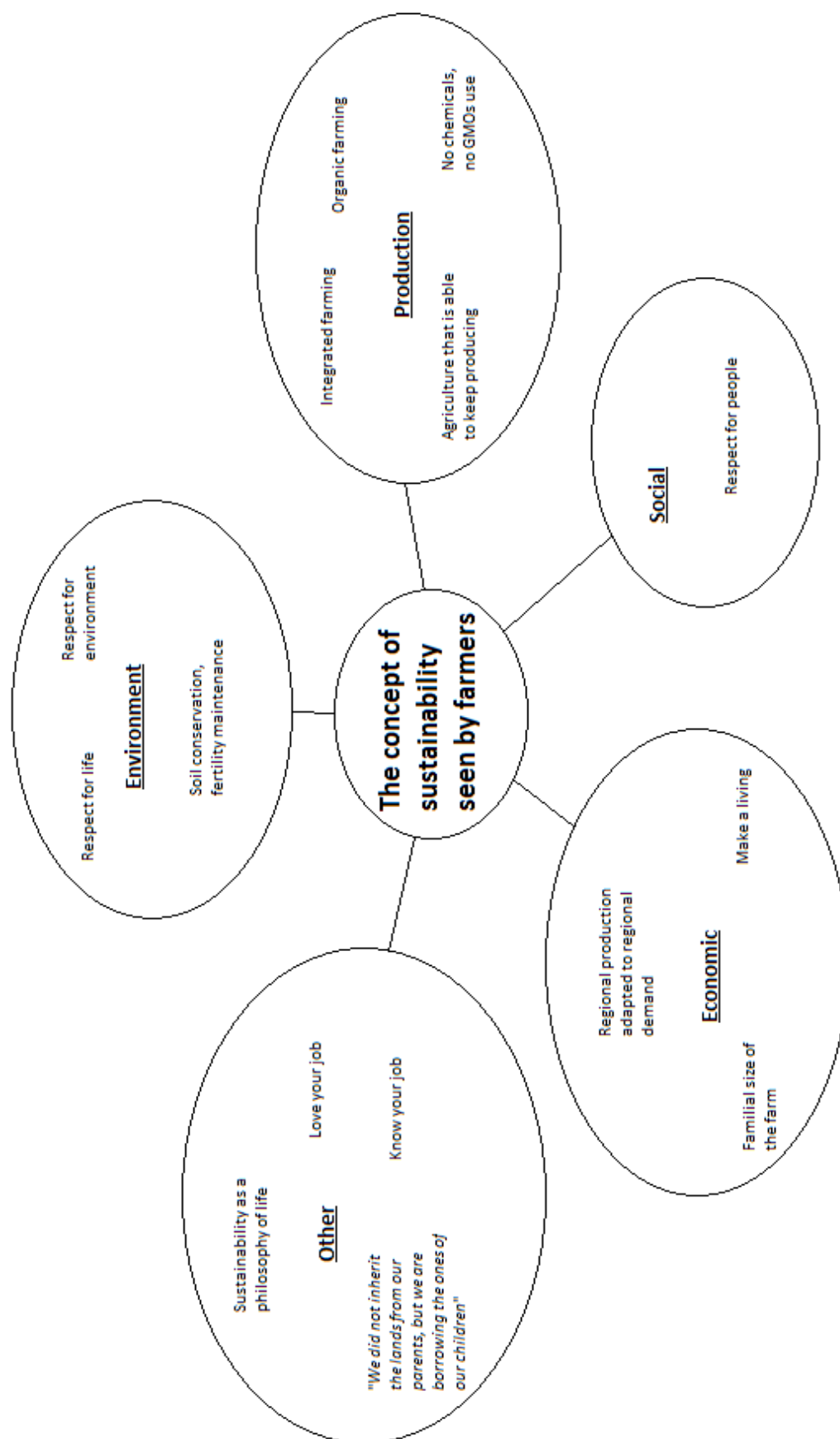


Figure 15: How farmers define the concept of sustainability in agriculture. All essential elements are grouped together in the different categories.

Does the definition of sustainable agriculture adhere with the one suggested by specialists?

Agronomical and other easily measurable statements can be found in both the suggestions of farmers and the literature suggested by specialists. Production and environmental consideration are similar in general.

However, non-quantitative data are usually less considered by specialists. For example, some farmers pointed out that the “*respect for people*”, the “*quality of life*” and “*the importance of the family*” are essential features of the sustainability in agriculture. If does elements are indeed difficult to measure and evaluate, farmers show here that they must be taken into account when assessing and designing a sustainable system in agriculture.

It is also most likely that those elements are much different depending on the socio-cultural background where the farmers come from.

Are there any similarities or differences between Nebraska and Neuchâtel?

At the beginning of the research project, the goal was to collect the same set of data in Nebraska and Neuchâtel. As explained earlier in this report (see *Sending the interview to farmers*) I sent a survey to 62 farmers in Nebraska and 67 farmers in Neuchâtel. In both countries half that were organic farmers and the other half were conventional farmers. I had a very successful rate of answers in Neuchâtel while only few surveys have been collected in Nebraska. As a consequence, and in addition with other reasons, I realized that not any strong comparisons are possible with our current set of data. I am thus not able to answer the third research question due to the following two reasons.

Lack of data and difficulties for setting a method of dissemination of the survey

As stated before, I had very poor rate of answer in Nebraska. There are some reasons for this. First, the initial survey was longer in terms of number of questions. I set more question in order to collect data for answering another research question. After analyzing the first results, and due to poor literature resources about the topic, I decided to abandon this research question. I then prepared a shorter survey in French for farmers in Neuchâtel that contained 22 box-check type questions and 1 open-ended question. This second version of the survey was thus faster to answer and still allowed me to collect information that still would make a comparison feasible. However, I doubted about the mean for sending and receiving answer. In Nebraska I sent an Email explaining our research project and sent an internet link to follow. Farmers had then to fill in the internet survey. But I doubt that farmers had actually time to spent 30 to 45 minutes in front of a computer. I thought that in case of interest from them to answer the survey, they may want have a paper format and fill it while drinking the morning coffee sitting around the kitchen table. I thus sent a letter of explanation, a paper format of the survey and stamped envelopes for returning the filled survey. When looking at the *Table 2*, it seems that this last method was much more appropriate than the first one.

Agricultural policies make comparisons not possible

Second, while searching for more information about agricultural policies in both countries, I started to realize that they were huge differences between United States and Switzerland. In 1996, the federal government let the Swiss population about the role and goal for Swiss agriculture. Voting have been accepted, thus the federal government introduce in the Swiss constitution the article 104 that rule the goal and obligation for Swiss agriculture. The federal article clearly states that agriculture must assume a function of multiplicity based on a production system that complies with

sustainable development and market requirements. Those roles are (1) food sovereignty, (2) maintenance of rural landscapes and maintenance of natural resources and (3) occupation of rural areas.

In order to insure such application of the regulation, federal government build up a subsidies system for farmers who applied regulation in their farming practices. Those tools are also known as “*prestations écologiques requises*” (PER) that stands for “Ecological required allowance”. As a consequence of the introduction of this federal law Swiss farmers are among the most subsidized farmers in the World. Subsidies in agriculture are indeed a highly debatable issue. However while most policies for subsidies in developed countries focus on overproduction and massive export (Rohac 2011), the Swiss federal government has put high standards for conventional agriculture regulation. Thus, products made in Switzerland by so-called conventional farmers are sometimes at higher quality standards than certified organic products from other European countries.

After considering this essential fact, I realized that the concept of “*conventional farmer*” in Neuchâtel and conventional farmer in Nebraska means something totally different due to huge divergence in agricultural policies. Thus I cannot compare the data we collected in Nebraska and Neuchâtel.

Conclusion

To conclude, this research did not successfully answer all the research questions. However, it showed the difficulty of finding a common definition for such a broad concept that is sustainability. Multiple perspectives lead to multiple interpretations of the same idea.

An important element for this research is the important to take into account all the main actors when developing the definition of a concept. In our case it means consulting all the entities along the food system. This titanic work is certainly very long and complex, but the ultimate result would hopefully give a holistic definition of the concept of sustainability in agriculture.

Missing the perspective of some entities may not result in a totally wrong definition, however as this study showed, some elements might be underestimate by some, while in fact it appear fundamental to others.

Developing a common definition of the concept of sustainability is essential for deleting the current misunderstandings and multiple interpretations about it, allowing a common base for moving together toward a sustainable future. Looking for a way to evaluate and take into account non-countable elements such as the quality of life, or the level of happiness of the farmer’s family is a future tool that would allow a better understanding of the real needs and perspectives of each entity within the global food system.

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Part two: What do we want to find in our plate tomorrow?

Workshop about the
The question of food
In our society

With the participation of:

Marc Frutschi, President of la
chambre neuchâteloise
d'agriculture et de viticulture,
CNAV



Noémi Schmutz, In charge of
the promotion of the Project
Fourchette verte Neuchâtel



Félix Würbler, In charge of the
office des paiements directs,
Service de l'agriculture SAGR



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Finally I would to thank my family and all the participants who attained the experience, as well as all the people that supported me during this project.

Summary

The food system is nowadays a complex system, usually expanding much further than our perception, as a “*simple*” consumer, would allow us to perceive. However, consumers stand at the very top of the food pyramid. Moreover, consumers in the wealthy developed modern societies have an increasingly diversified choice of food to eat.

The idea underlying the experience of this workshop is that consumers are key element for drifting the food system toward a direction or another. However, they must be aware of this stand and gain more insight about the current realities in the food system.

This workshop has been run the 25th of February 2012 in Neuchâtel (Switzerland) in order to offer better knowledge to the participants about the hidden realities behind the food system, as well as building up an open space for ideas to be generated and shared among the people taking part in this experience.

Participants had different presentations about the realities of agriculture in the canton of Neuchâtel, and then had to answer two questions asked about how they see the food system today and what they wish to have in the future one.

Results of the experience showed that participants want to have a food that is grown locally and follow what seasons offer. They attach great importance to the quality of the product they want. Participants also want to have “*non-edible*” element in their future plate. They seek for more involvement in the food system through different ways such as producing part of one’s food, reinstituting the importance of long-time meal or the art of cooking in simplicity. The means they have at their disposal is in general the will to make a step toward what they feel as important, such as shortening gaps between different actors in the system by knowing who is producing their food or looking for more information and teaching about this information. Ultimately, the participants suggest that the policy-makers have their role to play when it comes to regulation about food.

The experience showed interesting outcomes and could help better understanding what the current expectations of consumers are in the food system. It also shows great potential for developing ideas and constructive debate among different actors with the food system. I put forward that this kind of experience must be improved and offered more often to the citizens in any society.

Introduction

The definition and assessment of elements that are essential for the sustainability of the food system are usually achieved by policy makers and specialists from Academia as well as specialized institutions. As it is the case concerning the concept of sustainability in agriculture (see first part of the Master thesis), some authors argue that only a narrow set of specialists work with those fundamental questions (Kloppenburger et al. 2000). However, anyone is implicated in the constant evolution of the definition and assessment of these elements in his own everyday life. As a matter of fact, consumers' choices and behaviors most likely affect the system at their own scale. Thus, a better understanding of the idea of a sustainable food system should involve consumer's opinion.

In the previous part, the research focused on letting the farmer express their vision regarding the meaning of sustainability in agriculture. In this second part, the research goal is to let consumers express their perspective regarding the future of the food system. It has been decided that the best tool for this part of the thesis is to run a workshop about those essential questions. The choice of a workshop has been done because it offers multiple benefits at the same time. The first chapter will introduce the reasons for organizing a workshop about the question of food in our society. The second and third chapters discuss the organization of the workshop. In the fourth and fifth chapters, the results and outcomes of the experience are presented. In the sixth part, I give answers regarding the research question. I conclude this part in the seventh chapter.

Why a workshop?

As explained in the introduction, a workshop can offer multiple benefits for the ones who attend it.

The workshop has three purposes for the participants:

1. It should offer knowledge from actors involved in the different parts of the food system (producers, advisors, policy makers, and so on).
2. It should be an open space for the participants to define and express their own vision of their future food system.
3. It should emphasize a constructive debate among the participants. It should allow people to share and build up ideas together.

The cornerstone behind the organization of the workshop is that the "*ordinary citizen*" is considered as the main actor for a change in the global food system. However, shifts can only be achieved if the consumer possesses enough insight about the hidden clogs behind the global food system and thus can make appropriate decisions and choices.

I hope through this workshop to trigger personal questioning about the food issues in the global food system as well as offering better insight to the participants about how food is produced especially in Switzerland.

The workshop is based on some similar experiences found in literature where some authors ask "*ordinary citizens*" to participate in the definition of fundamental ideas such as sustainability of agriculture or the food system (Boogaard, Oosting and Bock 2008; Kloppenburger et al. 2000).

Research questions

Two research questions underlie the workshop. The overall goal through this experience is to perceive how the consumers define their own food system in a close future. The two questions are:

1. What elements participants feel as necessary in their food system of tomorrow?
2. How can the participants reach or make possible the elements they want to have in their future food system?

Those research questions may allow a better understanding of the expectations consumers have regarding the current food system.

Organization of the workshop

Explanations are given here regarding the overall organization of the workshop.

Previous experience in workshop organization

The courses **PAE 302** and **PAE 303** of the first semester of the Master in Agroecology offered at the Norwegian University of Life Science (UMB) include a concrete field experience. With four other students, we had the chance to run a workshop with the community of Tolga in the Northern part of Norway. As a cornerstone for this workshop, we wanted the participants in the community to define and build up their own visions for the future of the area. We introduce our perspective regarding the current situation in the community and issues the area is encountering. We then let the participants work and set themselves ideas and future perspectives for the community.

We liked the fact that, by taking the role of facilitator, we offered a space for the people to express their vision, and to define and imagine the future. However, our role was only to trigger reflections and actions taking, but not to suggest a step-by-step plan to take follow.

I felt important to include this fundamental element in this workshop in Neuchâtel (Switzerland). This essential idea of letting freedom for the participants has been taken into account in all the steps of the organization of the workshop.

Overall structure

As stated above, the best decisions are taken when all the knowledge you need is available. In order to follow the three main rules during this experience (see *Introduction*) the workshop has been set in two main distinct parts.

The aim of the first part is to offer better insight for the participants about agriculture, its origins to the current situation in Neuchâtel. Once this first part is complete, participants should hopefully have better insight and thus be prepared to express their visions and debate about their ideas during the second part. The first part is then essential for the participants to get better knowledge, while the second part allow them to define, express and share their own vision of their own future food system.

Further on in this report, those two parts will also be recognized as the “*passive part*” and the “*active part*”. This refers to the status of the participants during the workshop. During the first part, people will mostly gain knowledge and listen to different perspectives regarding the food system, while during the second part they will be more “*active*” in a sense that they will make their own opinion regarding the food system and share ideas with the other participants.

Looking for speakers

The first step in the organization of the workshop was to seek for speakers that would be willing to offer a presentation during the “*passive*” part. The presentations lasted about 20 minutes with an addition of 5 to 10 minutes for questions regarding the topic presented. Timing has been set this way for the main reason that I did not want participants to feel overwhelmed with too much information, and that they would still have some energy and patience to be “*active*” in the second part. Moreover there were 4 speakers, resulting in a 2 ½ hours first round of presentations.

Through different networks, people and friends, and some luck, three speakers that agreed to present a particular topic during the workshop have been found. I personally set the main topics I wanted speakers to cover, and then I discussed more details with each person regarding their participation. The speakers are presented in the following lines.



Marc Frutschi is the president of the “*Chambre neuchâteloise d'agriculture et de viticulture*” (CNAV)⁶ as well as a dairy farmer in la Chaux-de-Fonds (Canton of Neuchâtel, Switzerland). The CNAV is an association that helps, defends and promotes agriculture in the canton of Neuchâtel. They offer specialized advices for each type of agriculture, as well as information regarding policies and economic challenges farmers have to face.

I felt that it would be important and precious to have a farmer that could present his vision and reality of being a farmer in Neuchâtel these days. I thus asked **Marc Frutschi** to present the evolution of his work during the last 20 years⁷, as well as what are the realities he, and all the others farmers, has to face today.

Félix Würbler is in charge of the office of the “*paiements directs*”⁸, a department of the “*Service cantonal pour l'agriculture (Sagr)*”. The Sagr is a governmental department of the state of Neuchâtel that applies and executes the federal agricultural



⁶ Means “*chamber of agriculture and wine-growing of Neuchâtel*”

⁷ In Switzerland in 1993, the population voted a crucial new regulation regarding the agriculture in Switzerland. The government decided to write down in the Swiss federal constitution the role Swiss agriculture should have. The regulation states that agriculture should by sustainable means (1) supply the national need for food, (2) maintain natural resource and upkeep the landscape and (3) occupy the non-urban area of the country (Swiss constitution, article 104). As a consequence, the government started to offer subventions for farmers in order to follow the federal legislation. This is also known as the introduction of the “**PER**”, that stands for “*Prestations écologiques requises*” (meaning “required ecological allowance”). As a result, the standard agriculture in Switzerland must follow much higher regulations than other neighboring European countries (Barjerolle, 2008). This situation put the Swiss consumers in front of challenges where privileging Swiss products means paying higher prices compared to more competitive but less environmental friendly products of European countries and others. As another consequence, the government has also taken an increasing important role in the survival of small-surfaces, high quality farms in Switzerland. The case of subsidized agriculture is still debatable nowadays, but more importantly consumers have to be conscious of the high quality products Swiss agriculture produce. This is the reason why we asked both **Marc Frutshi** and **Félix Würbler** to speak about the evolution since the introduction of the **PER** of agriculture in Neuchâtel.

⁸ Translated by “*directs payments*”. Those are subventions government offers when a farmer follow the ecological requirements. The “*payements directs*” are the tools the government possesses in order to ensure the application of the PER regulations (see comment 7).

policies in the canton of Neuchâtel. It also seeks at promoting and developing the agricultural policies at the cantonal level⁹.

Félix Würgler has spent many years working in agriculture offices of the canton of Neuchâtel and thus has gained a very broad knowledge of the evolution of agriculture during the last 20 years. He has a personal interest for multilateral questions regarding agriculture and is very aware of the current issues farmers have to face in Neuchâtel.

I asked him to introduce the participant to the current situation of agriculture in the area of Neuchâtel, and give details regarding the evolution of agriculture from an economical and political perspective since the introduction of the **PER** in 1993. **Félix Würgler** also explained the situation for farmers in Switzerland that must compete against the farmers in Europe and the world.

Noémi Schmutz is a recent graduate student in dietary science. She is in charge of the promotion of the “**Fourchette Verte**”¹⁰ program in Neuchâtel. This program promotes healthy diet in public areas (canteen, restaurant, etc.) by according a label to meals that meet the dietary recommendations. I thought it could be interesting and important to have someone who could remind us about diet recommendations as well as how consumers’ behavior evolved during the two last decades.



Communication about the event

As soon as the three speakers confirmed their participation for the workshop, I started to plan how to communicate about this event. Information about the workshop was spread through different social network I have here in Neuchâtel (sport clubs, colleagues from previous studies, friends, other). Flyers and posters (see *Appendix 2: Flyer sent for the advertisement about the workshop*) have been printed and dispatched in public areas in Neuchâtel and La Chaux-de-Fonds.

⁹ Policies creation and execution in Switzerland is subdivided in three different levels. The higher level is the federal legislation, the second lower level is the cantonal legislation (a canton is similar to a state) has its own level of legislation, and finally the community level is the lowest legislative level. There is a certain level of autonomy left for each entities, allowing thus specific policies in agriculture (or any others field) to be applied in a canton and not another. However, the overall legislation is defined at the federal level, and must be applied and executed by an office at the canton level. This is the role of the “**Service cantonal de l’agriculture – Agr.**”

¹⁰ Means “Green Fork”

Organization of the afternoon

The workshop was run on Saturday the 25th of February 2012. The event took place in a study room I rented from the University of Neuchâtel (UNINE). It was planned that the entire experience would last about 4 to 5 hours. The following *Table 8* summarizes all the steps.

Table 8: Schedule of the workshop the Saturday 25th of February 2012

Time	Step
14h00 – 14h05	Welcoming
14h05 – 14h30	Presentation by Numa Courvoisier : From the origins of agriculture till the present days
14h30 – 15h00	Presentation By Félix Würbler : An outlook of the agriculture in Neuchâtel
15h00 – 15h10	Break
15h10 – 15h40	Presentation by Marc Frutschi : Being an agriculture today in Neuchâtel
15h40 – 16h10	Presentation par Noémi Schmutz : The “ <i>Fourchette Verte</i> ” program in Neuchâtel
16h10 – 16h20	Break
16h20 – 17h00	Second part of the workshop, introduction, answering the first question, debate
17h00 – 17h30	Second part of the workshop, answering the second question, debate
17h30 – 18h30	Conclusion and special thanks, Drinks

First part of the afternoon, the “*passive part*”

16 people, 3 speakers and I attended the first part of the afternoon. Genders were equally divided among all the participants. Ages ranged from 21 years old to 60 years old with an average age of 38 years old.

As explained above, in the first part, participants were introduced to agriculture, its origins and evolution (presentation by Numa Courvoisier), the current situation in the area of Neuchâtel from both the political and economical perspectives (presentation by Félix Würbler) and the farmer perspective (presentation by Marc Frutschi), and eventually the diet recommendations from a nutritionist perspective (presentation by Noémi Schmutz).

The presentations lasted for about two hours and a half. The *Table 8* sums up the organization of the workshop during the afternoon. In the end, participants ask and discussed different interesting points.

An interesting point to mention is that the participants were quite puzzled when it comes to have the best possible behavior as a consumer. Some participants were concerned about how to choose the right food when they have to deal at the same time with environmental awareness regarding to the production of the food, political and economical issues regarding where the products has been made, and the recommendations suggested by nutritionists.

Second part of the afternoon, the “active part”

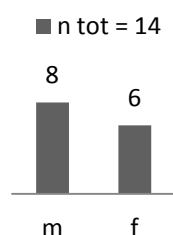


Figure 17: Gender proportion during the second part of the workshop

In this second part, we were 14 participants left (speakers changed role to become participants as well). The group has been divided into 2 tables of 7 people each. I presented the goal and importance of this second part of the workshop. As explained earlier, my main intention for this second part was to trigger a reflection among the participants, and to ask them to answer the question of the workshop:

“What do we want to find in our plate tomorrow?”

Gender where almost equally divided (see Figure 17). Participants age show a multigenerational sample (see Figure 16). Activities of the people are also representative of a wide diversity of professions (see Table 9).

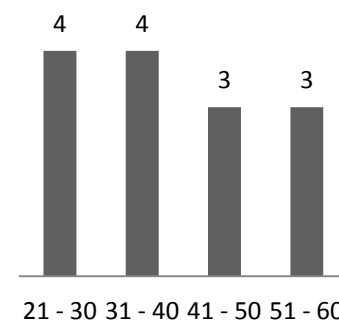


Figure 16: Repartition of ages of participants. Numbers on the horizontal axis represent ranges of age

Table 9: Activity of the participants attaining the second part of the workshop

Activity	
Agriculture engineer	Human resource consultant
Biologist	Interior decorator
Biologist / market gardener	Nurse
Car instructor	Recent graduate, seeking work
Engineer / “mom”	Salesman
Farmer (3)	Student

In order to collect information, I gave a sheet of paper (see Appendix 3: Questions sheet given during the second part of the workshop) on which I ask the participants (I included myself in the experience) to answer the two following questions:

1. “To my opinion, my plate tomorrow will be composed by...”
2. “How, in practical terms, will I be able to compose the plate I wish for tomorrow? What are the elements I have at my disposal and what are the ones that I need?”

The purpose of the first question is to force participants to reflect and set their own vision of the future food system they wish to have. Then, the second question aims at grounding the vision, and hopefully may allow them to seek and find solutions for making their “plate” a reality.

Participants had about 10 minutes for them to think and write down ideas about those two questions. I started by presenting my ideas, and then the other participants also started to share among each others. The same process happened in the two tables. In the end, participants answered the two questions and discussed about those at the same time.

Collecting information

During the workshop, I write down some of my personal observations regarding the evolution of the discussions and debates. There were no other specific means for collecting information during the first part of the afternoon. For the second part, I collected the answers at the end of the debate. I also wrote down the ideas that were raised during the debate in the table I was responsible for. I

asked someone else to do the same in the other table so that I could have some information about the ideas that this group had.

Outcomes of workshop

As explained in the previous chapter of this report, I collected the ideas that participants wrote down. All those ideas are now presented in two parts for each of the two questions. Ideas have been analyzed. Categories have been created in order to merge some similar suggestions of participants. I measured how many times some similar ideas were presented.

Results for the first question: “To my opinion, my plate tomorrow will be composed by...”

The *Figure 18* shows the main categories that have been set after the analysis of all the data. I created four main groups and a fifth minor category. The groups are (1) the geographical and seasonal concerns about the food products, (2) the quality of products, (3) the involvement of the consumer at the base of the food system (i.e. the consumer is willing to produce part or all his own food) and (4) the involvement of the consumer at the end of the food system (i.e. the consumer is active when it comes to transforming basic goods into refined meals). A fifth category has been set. This category is shown with the two circles that are outside the plate in the *Figure 18*. Those are reflections about (5a) the current situation for us as a consumer and reflections about (5b) the importance now and in the future of the choice between products.



Figure 18: Elements considered by participants to find in their future plate

In the following part I will go through each category and present all the ideas collected. Opinions of participants were collected and grouped together in the five main categories. I measured how many times ideas appeared and weighted the results with the following system.

Ideas that were suggested one or two times are shown in a small yellow bubble. Ideas that were raised three or four times are shown in a medium orange bubble. Ideas that appeared five times or

more are shown in a big red bubble, and finally ideas that were presented ten times or more are placed in a huge purple bubble.

Geography of the product

The first category that was created is the “*geography of the product*”. The Figure 19 summarizes the different ideas collected.

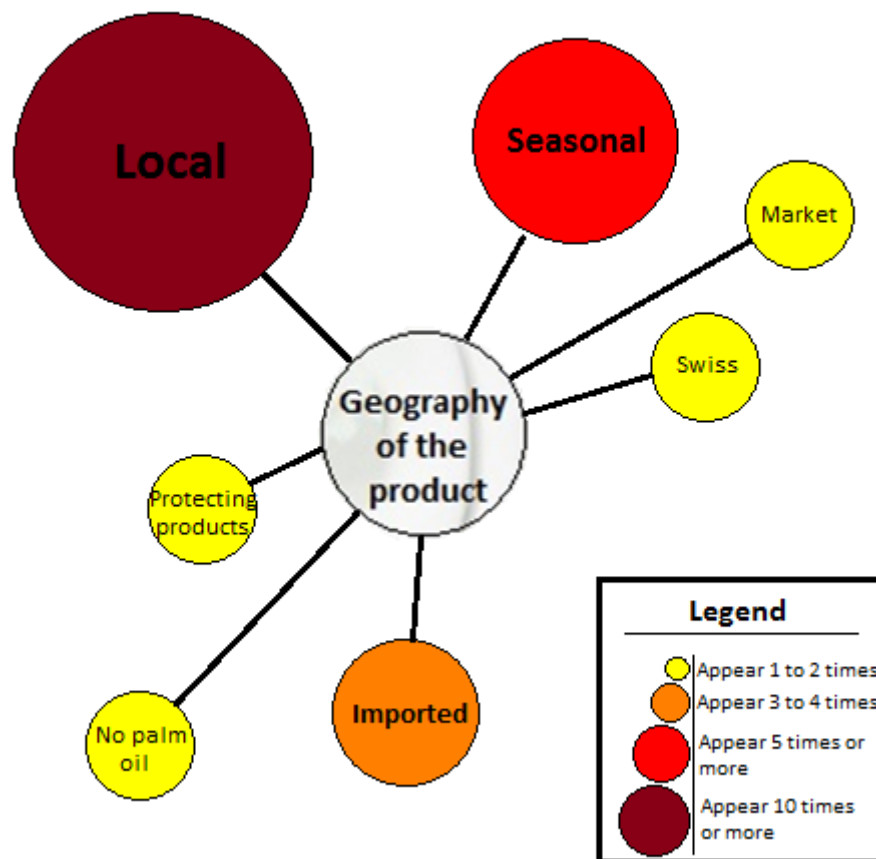


Figure 19: Ideas suggested by participants concerning the geography of the products

Local as a major component of the plate of the participants

“*Local*” is suggested ten times among the fourteen participants. This result shows a very important awareness of the participants regarding the food transportation issues. However, “*local*” still remains a blurry element regarding the boundaries between “*local*” and “*non-local*”. Participants did not specify clearly what is local for them. But other ideas below give more insight about a possible interpretation of this idea.

Seasonal products

Products from the season are also very important for the participants. It appears six times among the people. This is another idea that suggests a great awareness among the participants about food production and seasonality among.

Imported products

Some participants want imported products, especially the ones that do not grow in Switzerland such as spices or citrus fruits. This idea could help defining the previous suggestion about *“local”* food. The boundaries between *“local”* and *“non-local”* could be interpreted as what grows in the country and what cannot grow. One of the participants concludes his suggestion with the following interesting comment that *“trade and exchanges have always existed between human beings, but it is how much of those you need in your system that makes the difference”*.

Other ideas

Four other ideas are related to the geography of the product. As I raised the question above, many participants stated that they want *“local”* products, but no more accurate information was given regarding where to put the boundaries between *“local”* and *“non-local”*. I interpreted an underlying element that gives more clues about what is *“local”* in the previous idea. As another clear boundary, one participant specifically put the geographical limits of the food he eat by stating that it has to be Swiss products.

Someone states that he wants the protection of both the local products and the imported ones. By protection, the person means the respect of environment as well as the respect for the farmers that produced the goods in both Switzerland and in the developing countries.

One last idea that is grouped in the geography of food is a participant that wishes to end the use of palm oil in Switzerland and promotes the use of Swiss rapeseed oil.

All those elements show a great awareness of the participants regarding the issues of food transportation and the respect of seasonality. If it seems that the participants privilege Swiss products, some also clearly mentioned the need and the desire for *“exotic”* products that do not grow in Switzerland. Concerning that last statement, I guess that, regarding the ideas that emerged, participants are cautious when they choose products that have been made in developing countries. Local food is very important for many participants. Based on some other ideas suggested, I interpreted this suggestion as the fact that the participants want Swiss products, and if they can regional products.

Quality of the products

In this category, elements that deal with the quality of products are grouped together. Some of those ideas could also fit in the other categories, but I kept the elements in this group for the main reason that participants each time clearly express the word “*quality*”. As it is shown in the *Figure 20*, participants have different interpretations of the “*quality*” of the food.

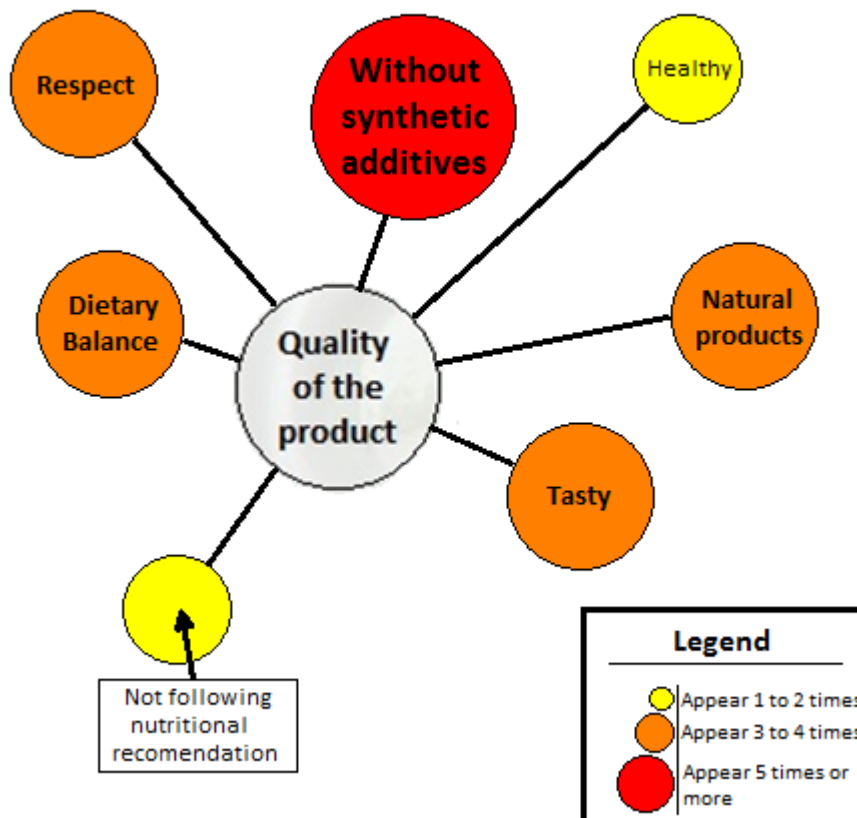


Figure 20: Elements of quality proposed by the participants

Quality has been presented in many different ways by the participants. I will go through the different interpretations of this idea in the following parts.

No synthetic chemicals in my food and natural products

More than five participants clearly mention that they do not want addition of synthetic compounds in their food. I guess that, in a way they seek for natural products. However, I separated those two ideas because for each of those two (i.e. “*Without synthetic additives*” and “*Natural products*”), the participants clearly write down different words.

Respect

Three to four participants expect to find more respect in their plate. They specify that they want respect for the environment as well as for the producers.

Tasty products

Another interesting idea that comes out is the importance of the taste of the food we eat. Three to four participants point out that it is important for them to have products that taste something in the mouth. This idea has been brought up during the discussion. We had interesting comments, during the group work part, of participants, showing their concerns about the loss of taste in food, mainly due to the reduction of taste to the three simple ones: salty, fatty and sweet. Some participants showed awareness regarding the will to keep and to have more taste in the food today.

Dietary and non dietary balance

Three to four participants stated they want to have a balanced food that fulfills their everyday dietary needs. After some discussions around this idea and analyses, this does not specifically mean that the participants are looking precisely at the dietary recommendation, but more that they want what their body needs. One participant clearly states that he does not follow the dietary recommendations. I kept this comment aside from the first “Dietary balance” bubble, because, from our opinion, the meaning of both ideas is a bit different.

Natural products

Three to four participants want natural products in their future plate. My understanding of this opinion is that the participants look for natural base product and/or non-refined products. It is most likely that the participants are then preparing themselves meal with the basic natural products.

Healthy

One participant mentioned that he seeks for healthy products, without specifying his interpretation of what is healthy. I interpreted, based on the other ideas collected, that the participant looks for a product that is at the crossroad between the other sub-categories (i.e. “*Without synthetic additives*”, “*Natural products*”, “*Tasty*”, and so on). As long as the word “*healthy*” has been written down, I decided to keep this idea the way it was suggested.

All these ideas suggest that participants seek for quality products. The term is interpreted in general as a natural, without chemicals, healthy food. With minor importance, another interpretation suggests that quality means respect for both the farmers and the environment.

Active involvement of the consumer at the base of the food system

In this category, all the ideas have the common point that they imply an active involvement of the consumer at the base of the food system. Indeed, I collected here ideas from the participants in which they suggested that the consumer should become a producer of a part or all in own food. The *Figure 21* summarizes the collected suggestion.

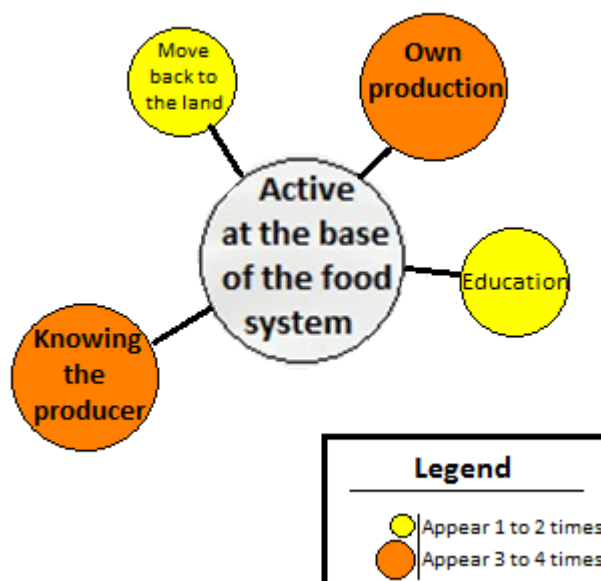


Figure 21: Ideas suggesting an active involvement of the consumer at the base of the food system

Own production

Three to four participants want to involve themselves in their own food system. Some participants specify that they want to produce their or part of their own food with methods that respect the environment. If this is a very interesting idea that rose from the workshop, it has to be moderated as long as they were two farmers and one market gardener (see *Table 9*) attending the workshop. It would thus not necessarily mean that any consumer is willing to sweat during long days for harvesting some vegetables of his own.

Knowing the producer and moving back to the land

Three to four participants are willing to close the gap between the producers and themselves by knowing more who is producing what is in their daily meal. This encouraging attitude shows that some consumers are making steps towards producers, and are slowly “*moving back to the land*” as one participant wrote it down.

Education

One participant makes a very interesting comment. At the crossroad between “*producing his own food*” and “*moving back to the land*”, he also wants to offer more education to both producing and eating with an environmental friendly and sustainable approach. Having a land in there important in order to show and share with others what and how to do things.

This encouraging idea shows the willingness some consumers may have to become actors of their own food system. This idea is correlated with the statement I put forward when organizing the workshop that the citizen are the main actors of their system and changes occurring in it.

Active involvement of the consumer at the end of the food system

I grouped here ideas where the consumer has an active role at the end of the food system. The following *Figure 22* presents the suggestions from the participants.

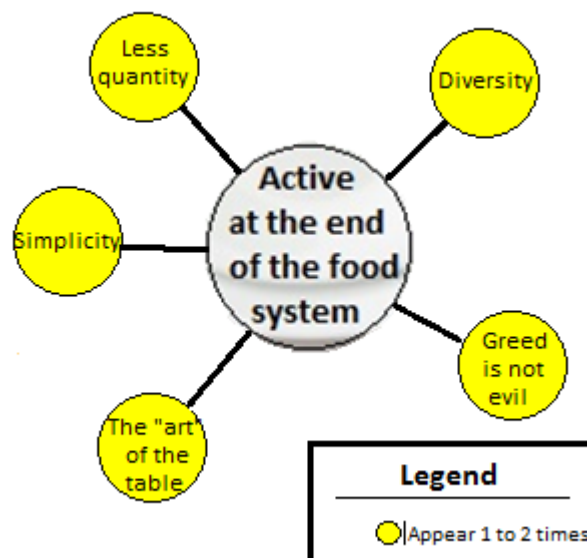


Figure 22: Ideas suggesting an active involvement of the consumer at the end of the food system

The “art of the table”

Two participants suggested and discussed during the workshop about the importance to restore what one could call the “*art of the table*”. The way we eat has changed through times and we usually nowadays need to have meals that are quickly ready, without specific considerations for the kind of products found in the plate. We are nowadays losing the patience to sit around a table, share and enjoy a good meal. There is less time allowed for this activity. It is then very interesting and encouraging to see that some participants want to put more of their time and energy for setting around a table and taking time to eat together.

Simplicity

This idea, that could be also related to the “*art of the table*” presented above, has been suggested by one participant as an important point that should always be remembered when cooking food: it should always remain easy! There is no need to spend hours and waste time and energy for cooking without pleasure and for no other reasons than absolutely wanting to serve a much elaborated meal to your host. Cooking should really remain a simple activity that only imagination could mark the boundaries of. While explaining his idea, the participant also suggested that keeping cooking as a simple act could also help children to get into it, and thus enjoy preparing food and knowing more about a wide variety of products, while at the same time increasing their insight and awareness when they will have to make decisions as an active consumer.

Greed is not evil

To some extent, this idea also has some links with the two previous suggestions. Greed is not evil. There is nowadays more and more dietary recommendations and in many cases for good reasons. However, such as the participant that suggested this comment, nobody ever said that some foods are not good for human beings and thus should be banned from dietary habits. The key measure here remains in the “*art*”, such as the “*art of the table*” explained above, to not exceed into greed, and try to always balance foods we eat with what everyone really needs. In a way, this could be summed up as a “*measured everyday pleasure of eating*”.

Less quantity

Two participants suggest that they want in their future plate to have less quantitative foods. If they did not clearly specify it, I guess that, in regards to all the previous ideas, they want to accord more importance for the quality of the products.

Diversity

One participant suggests the idea that his food should be diversified. He mentions that diversity means diversity of food cultures as well as trends in food consumption. The fact that food habits should follow in parallel the surrounding food environment is interesting. This participant is here very aware of the fact that food habits are consistently evolving through generations and among cultures. When some participants want to keep old habits of eating while sitting around a table, some others suggest that we also should adapt ourselves to our evolving social and cultural environment.

Participants showed here that an involvement at the end of the food system is what they want to have in their plate. Cooking is the best example suggested in this category.

Some reflections from participants

Two comments made by participants have been here put aside. Those are concerns about the consumer situation and the consumer choices.

The choice of the consumer

One of the participants points out that he feels very important the fact that consumer will always have the choice between mass products and quality products. It is interesting to notice that this participant may sense a potential threat regarding the most important right of the consumer: choices.

Our current situation as consumer in western developed countries

As a slightly different concern, someone else wonders for how long we will have the current opportunities as privileged consumers. Indeed, this participant showed awareness about the chance we have today in terms of time, information and money available for making choices when it comes to food products. However, will this chance last forever? This is a very interesting question that the participant brought up here. I guess there is unfortunately not answer to it. However it is more than important to remember this chance and consider it in our everyday life and decisions.

I summed up and analyzed all the ideas that came up while answering the first of the two questions of the workshop. If some mentioned points are expectable, such as the local and seasonal foods, some others are more surprising such as the will for an active involvement at both the base and the end of the food system. Moreover, the two concerns that some participants pointed out are also very appropriate, showing high level of insight and awareness of the participants during the workshop. We could put forward that, for the participants, the information and knowledge regarding food is well mastered. The question that now remains is how to trigger such an in-depth reflection for other non-interested consumers?

Results for the second question: “How will I create the plate I want? What are the elements I have at my disposal and what are the ones that I need?”

The following *Figure 23* summarizes the five main categories found when analyzing the results for the second question. The four categories that are on the plate (i.e. Active involvement in the food system; Tradeoffs; Need for time; Information and communication) are categories where the consumer has a direct influence on the action he want to undertake. The role of the consumer can here directly bring a change in the food system. The fifth category (i.e. Suggestions where the consumer has a lower level of direct influence) is a category where the suggestions of the participants are not directly impressionable by the consumer. As we will see in more details below, those suggestions are usually related with the political side of the food system.



Figure 23: Ideas suggested by participants in order to help them making their plate possible

The consumer as an actor of its own change

Ideas suggested by the participants for answering the second question are presented in the following part. I will first go through the four categories that are shown on the plate in the *Figure 23*.

Active involvement in the food system

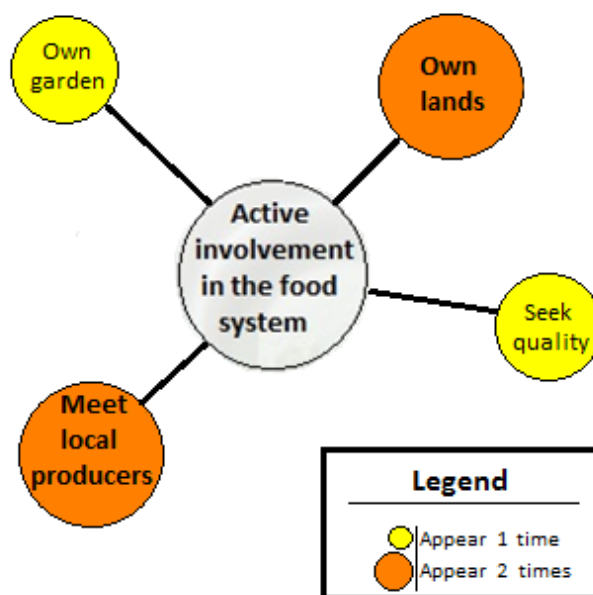


Figure 24: Active involvement of the consumer for making the plate of tomorrow possible

Some participants suggest that in order to get the plate they wish for tomorrow, they will involve themselves in the production of their own food. Indeed, someone mentioned that he will develop and produce food from his own garden. Two other people mention the need to have some land in order to produce their own food. If those ideas are very interesting, showing the concern for some to totally become actor of their own food system, we have to remember here that some of the participants are actually farmers and market gardeners. Thus, producing part of their own food is actually also their way to make a living.

If the production of your own food can be quite challenging, there is still the possibility to get closer to the producer. Two people suggested they will go and meet the person who is producing the food they eat. This shows also great concerns for some of them and the need to bring both sides of the food system together.

Finally, if the consumer can go and meet the producer, someone also suggested that he can meet quality. As a matter of fact, we also can seek for what we are looking in terms of quality product.

Tradeoffs

Someone pointed out that there is no “right or wrong” behavior when it comes to food choices. The key is actually to be able to make tradeoffs while at the same time keeping the ethic or philosophy of food someone set for himself. Any choice is complicated and implies positive and negative impacts for the environment, the society, the producer and many other entities among the system. The key is to be able to weight all parts and make the best choice while not falling into a radical vision of someone’s “food ethic”.



Figure 25: Tradeoffs are necessary abilities in order to become a responsible consumer

Information and communication

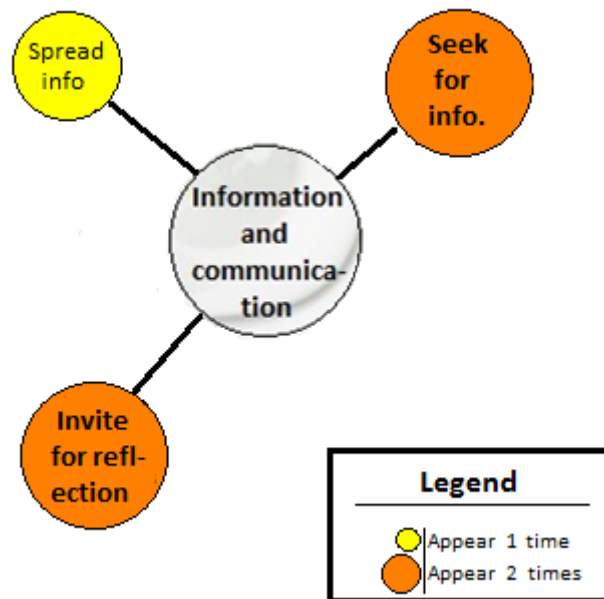


Figure 26: Information and communication as keys for becoming an aware consumer

Many participants suggest ideas linked with communication and the spread of information regarding food and the current food system.

Two people mention that in order to get the plate they wish for tomorrow, they have to seek for more information regarding food products such as how they are produce, where, by what means and so on. An obvious reason for this is to allow consumers to make better choices regarding their “*food ethic*”.

As a further step into this process of looking for information comes the need to inform around you about what you have learned. One participant stated that he wish to spread more information and knowledge about food realities. Two participants follow the same suggestion, and wish to invite other consumers to reflect about food. Those very interesting suggestions reinforce the idea that there is a need for more of this kind of event around the question of food nowadays in our society.

Need for time

Someone reminds us here that in order to try to behave as the most responsible and aware consumer in the store, you need time. Indeed, when trying to make the best choice, you need first to look for information, then seek for labels and other information printed on the package, you then need to compare the products you want with others, and so on. In the end, going to the store to get a couple of apples can take you the whole afternoon, and nowadays there is only a few of us who can allow such an amount of time for food selection. Indeed, being an aware and responsible consumer demand time we do not always have for.



Figure 27: Time is the key to make the best decisions

Suggestions where the consumer has a lower level of direct influence

I put suggestions in this category where the consumer has usually a limited impact when it comes to changes. Those suggestions are usually related with political or commercial decisions.

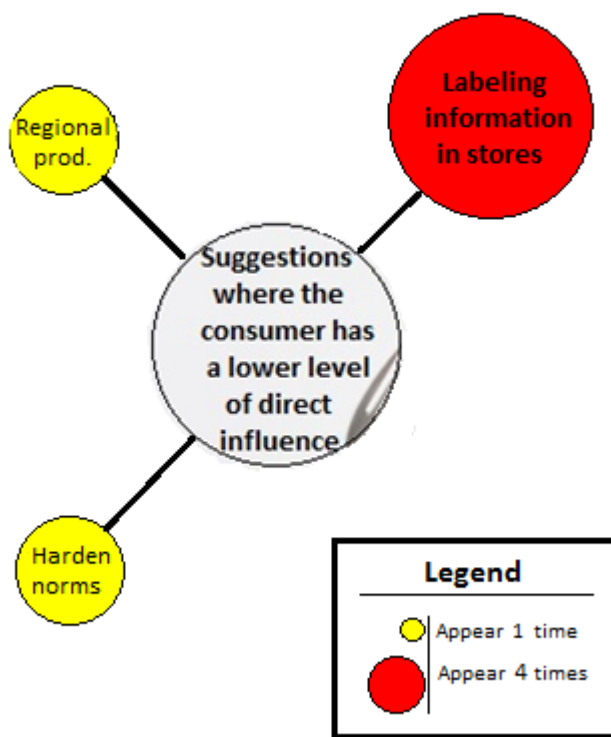


Figure 28: Suggestions where the consumers has not directly the power to change the system

Four people suggest that there should be a better or different labeling strategy in the store. Some have proposed for example that products should mention the amount of CO₂ that was released during the whole production, processing and transportation stage. Consumers can here put more pressure on the distributors but it seems to remain a hard but worthwhile battle to fight for.

Someone else consider that the policymakers should reinforce and hardened the norms regarding food production. If there is a consumer's will behind this idea, politics are most likely to be the ones who can here make a difference and induce a shift toward the desired direction.

Finally, someone says that the production in any area should remain diversified and meet the consumer's expectations. Once again, this can be achieved by political decisions to protect and promote regional production and consumption. However, due to liberalization of markets, this situation is increasingly threatened to disappear in the name of the global market.

How things turned out during the workshop

I am very thankful for the three speakers, Marc Frutschi, Noémi Schmutz and Félix Würzler to be willing to make a short presentation on each relevant topic around the question of the food in our society nowadays. I was totally satisfied with the quality of the speakers, and thus could cover a broad perspective around agriculture and food behavior in Neuchâtel. Without those speakers the entire workshop would not have had the same impact and quality. At the end of the afternoon I

received good feedbacks from participants who told me that the quality of the speakers and the spectrum of topics covered by them were great and well articulated.

I am quite satisfied regarding the whole experience. Despite the fact that the workshop was quite long, the afternoon was diverse, interesting and full of rich ideas and discussion among the participants. I am fortunate to have been able to create the space of expression we hoped to build with this workshop (see *Introduction*).

At the end of the first part, participants started to interact and debate around different questions, especially how should we, as consumers, behave in order to be environmentally friendly, socially responsible and still be able to buy the products we want. Participants were very active and willing to express their ideas and questioning.

The second part was also rich of ideas and sharing. Participants were a little bit intimidated at the beginning but we then shared many different opinions regarding the main topic. If we really appreciate that participants were willing to discuss, we felt hard to lead the debate to certain topics. Moreover, it was harder to take notes while at the same time participate in the debate.

To bring to an end this part, I am very satisfied with the overall experience. I challenged myself and try this out. I put forward here that communication and creation of space of expression is a mandatory step when it comes to initiate changes in the food system. I am happy with the overall organization and the structure of the workshop. I think that we covered quite a broad perspective of the current agriculture situation in Neuchâtel with the time we had.

There is however a couple of points I have to improve. The first is that the communication strategy was poor and badly organized. I guess that with a better communication and advertisement around the event I could have more people attending. After thinking of it, I thought that it was maybe too long and that some people might have been discouraged to participate an entire afternoon to such an event. However, I tried at my best to make a tradeoff between the two parts of the workshop. I should have better led the debate at some point. Questions and ideas started to rise in all directions. If I wanted above all to keep an open space for sharing and discussions, I should have better directed and let everyone to express their idea. Ultimately, I should have better managed the presence of any media in order to gain more advertisement of this kind of event.

The perspective of the participants

I had some good feedbacks at the end of the end. In general participants were quite happy with the afternoon. I wanted to measure the effect of this event and how did the participants feel about it. For this, I sent a short survey to the people who attended the active part of the workshop.

Sending a short survey one month after the workshop

We asked 4 short questions to the participants:

- 1) Did the workshop of the last 25 February change your vision regarding the food system?
- 2) Have you changed your behavior as a consumer since the workshop?
- 3) According to you, does this kind of event present interest for the society these days?
- 4) What are the points that need to be improved regarding the workshop?

For the question 1 and 2, we asked the participants to comment when they answered “yes”. For the question 3, we let open space for the participants to comment if they wish to do so.

The perspective of the participants one month after the workshop

I summarize the results of the short survey in this part. I collected 6 surveys out of the 12 (50% rate of answers) I sent to the participants of the active part of the workshop. The following figure HFG sums up the results for the three first questions.

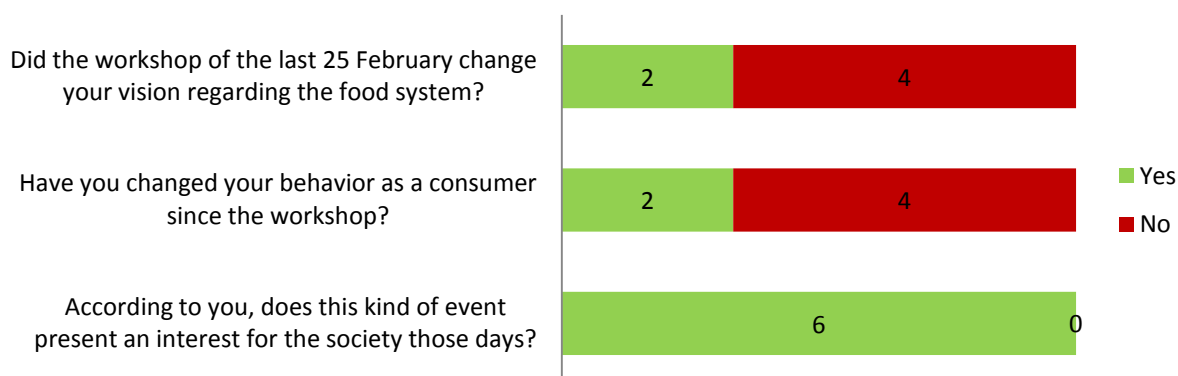


Figure 29: A short survey has been sent to the participants of the second part of the workshop in order to evaluate the impact of this kind of event

Two participants said that the workshop changed their vision regarding the current food system. One person commented that in fact, the workshop did not totally changed her vision, but now the person is trying to be more aware of where but also how are produce the vegetables she eat. Another person commented that it is actually difficult to make always the right choices for the overall system.

Regarding the second question, two participants also said that the workshop make them change their behavior as consumer. Someone add the comment that as a consumer he was already buying regional products such as meat and vegetables, but he is now more careful regarding the origin of “*aside*” products such as bread, butter, oil and so on. Another person commented that she is now trying to buy more Swiss products instead of international ones such as Swiss apple juice instead of “*Fair-trade*” labeled orange juice or Swiss rapeseed oil instead of foreign olive oil.

Regarding the third question, all agreed that there is an interest for the society to have such event. Someone commented that it can help to learn which behavior consumer should adopt, but as a negative effect this kind of event only bring together people that are already quite aware of those questions. It should be thus interesting for a future event to target a population that has no interest in those questions. Others comments were that this kind of event is a great way to spread information, knowledge, to learn other’s ideas regarding food and to have constructive debate around those questions that help citizens to build up better insight about the current food system. This is a healthy process that brings more results than relaying dissatisfaction and dialogue of the deaf through television and newspaper.

Concerning the last questions we had few comments for the points that can be improved. The few comments are comments about the debate. There should be more time for the debate at the end of the first part. During the final part of the workshop, debate should be better led, so that discussions do not flourish in many opposite directions. Another very relevant comment is that we should have conclude the workshop with a open reflection among all the participants and try together to point out the important key element we had during the all afternoon.

Otherwise we also had some good comments. Someone told us that the speakers, topics covered and the number of people was very appropriate and thus could allow the participant to open a discussion. Someone else congratulates us and mention that the overall experience was perfect!

Answering the research questions

After having presented the different results collected, I will in this part answer our two research questions.

What will the participants want to have in their plate tomorrow?

The participants suggested that they want some fundamental elements in their plate. Three major aspects have been put forward. The people who attended the workshop especially care about **(1) the geography** of the products. Many participants seek for local and seasonal food. **(2) High quality** products are expected as well by the participants. They especially look for quality products that are made without the use of chemical products during the production stage. Food must be healthy and be nutritive. Ultimately, some participants interpret quality as food that is social fair. Participants show great concerns for being **(3) active consumer** within the food system. Many suggestions show that the participants are willing to involve themselves either at the base of the food system by producing part of their own food or at the end of it by cooking and enjoying the products.

Some suggest that the western consumer should be **(4) aware of his chance** to have so many choices today, and should make sure that **(5) there will always be the opportunity to decide in the future**.

How will they create their plate?

In order to meet their expectations, the participants suggested different approaches that will help them compose the plate they want in the future. Suggestions are: **(1) the involvement of the consumer** (this can be by producing part of their own food, or by directly meeting and buying from local producers); **(2) Being able to make tradeoffs** because there is no “right or wrong” choices (this implies also avoiding falling into radical extreme food behavior); **(3) learning, sharing and spreading information about the food** we eat. Those are actions that can be undertaken directly by consumers. They only require the will to become the consumer everyone wishes to be.

Participants also suggested that **(4) policy-makers should tackle international food regulations** and moderate the current liberalism policy. Finally, distributors should, probably under the pressure of policy-makers, **(5) offer better information regarding all the environmental, social and economic costs** of food.

Conclusion

As a conclusion of this second part, this experience has met most of the expectations I wanted. It has offered a space for the participants for learning about the food system in the canton of Neuchâtel, as well as for expressing and sharing their personal vision of what they want to find in their plate in the future.

Once again, I am very thankful for the three speakers to be willing to present about different topics that hopefully give more insight to the people attending. Without them, the workshop would certainly not be of much interest.

This experience has also show the potential of such an event in the society to learn and spread information, while at the same time giving the chance to people to build up constructive ideas together. The two part of the workshop have their sense, and skipping one or the other would not have as much impact as it could have. A smooth introduction allows then a better opening at the end.

However most, not to say all the participants that attained the workshop where already people who by themselves started to wonder about those issues in the food system. Most of them had already strong stands regarding what should be the best behavior to adapt as a responsible and aware consumer. A question that should be brought up here is then how to trigger an interest about those issues for people who totally do not care about? Turing this in another way, the question would be ***“why, how and when did I personally start to be interested in those issues?”*** I think that having answers regarding this question could help triggering more interested among the population. It could help improving the advertisement about such events and bringing a wider diversity of opinions about food in general. I guess that they always will be people who will never be interested and other who will be over interested. Yet there are a large number of people who stands in the middle of those two positions, and that could potentially be more curious about those issues. There is here a lot more to search and learn about how to turn on the spark.

Then off course, there is no easy single answer about what to do and how to behave, yet starting to wonder about what's in my plate is a good way to answer the question though.

References part two

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Appendix

Appendix 1 - Survey for the research about how the farmers define the concept of sustainability

Appendix 2 - Flyer sent for advertisement about the workshop

Appendix 3 - Questions sheet given during the second part of the workshop

Appendix 1: Survey for the research about how the farmers define the concept of sustainability

Master study research in Agroecology:

Open-ended question:

1. How do you define a “sustainable agriculture”? What are to you the important elements that define a “sustainable agriculture”?

Multiple choice question (only one answer possible per question):

2. Family quality of life is an important element for the sustainability of the farm:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

3. Local production, processing and consumption are parts of the sustainability of the food system:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

4. Food is a necessary human right, along with clean air and water:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

5. Farming is a business like any other

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

6. Chemical pollution from pesticides and fertilizers is a major Nebraska/Neuchâtel problem:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

7. Natural fertilizers (manure, green manure, compost) can replace efficiently synthetic fertilizers:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

8. Diversity is a fundamental element of a sustainable agriculture:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

9. There are many opportunities today for young farmers:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

10. The food we eat should be considered as a “*sacred*” good:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

11. High technologies are possible together with environmental production:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

12. Agricultural inputs (fertilizers, pesticides, and fungicides) can damaged human health:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

13. Economic viability of the farm is the most important element for sustainability:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

14. Farming with farm-based resources can help solving the current global food needs:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

15. Rural communities should be more important in the future:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

16. Pesticides application following label directions is safe for the environment:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

17. External inputs to the farm are necessary for the sustainability of it:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

18. There is too much regulation on chemical application in agriculture:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

19. Independence of farmers is a major element for a sustainable food system:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

20. The reduction of household food waste is necessary for a sustainable food system:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

21. Soil conservation through management is key to sustainable farming:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

22. Sustainable farming could be seen more as a philosophy than a business:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

23. Shortening the links between the farmers and the consumers can have benefits for all:

strongly disagree

☐

mildly disagree

☐

undecided

☐

mildly agree

☐

strongly agree

☐

Comments

Que voudrons-nous trouver dans nos assiettes demain ?

Atelier de réflexion collective autour de la question de l'alimentation d'aujourd'hui et de demain



Avec la participation :

- Marc Frutschi, agriculteur et président de la Chambre neuchâteloise d'agriculture et de viticulture (CNAV)
- Noémi Schmutz, diététicienne diplo. HES, Fourchette verte Neuchâtel
- Félix Würgler, responsable à l'office des paiements directs du Service de l'agriculture (Sagr)

Samedi **25 février 2012** à 14 heures à Neuchâtel (Rue Emile-Argand 11, 2000 Neuchâtel, un plan d'accès détaillé sera envoyé lors de l'inscription)

Inscription **gratuite** et renseignements :

Numa Courvoisier, étudiant de Master en Agroécologie à l'Université de Sciences de la Vie de Norvège (UMB)

numa.courvoisier@hotmail.com

Délai d'inscription : 24 février 2012

Appendix 3: Questions sheet given during the second part of the workshop

Workshop about the question of food, Saturday 25th of February 2012

Age:

Gender: m / f

Activity:

First question: For me, the plate of tomorrow will be composed by...

Second question: How, in practical terms, will I be able to compose the plate I wish for tomorrow?
What are the elements I have at my disposal and what are the ones that I need?